The MYCOLOGIST

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Recognosce notum, ignotum inspice

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Cover: Dryad's Saddle (*Polyporus squamosus* Huds.:Fr.) Photo: A W Brand.

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COMMENT

The autumn foray season will soon be here and *The Mycologist* is providing full details of all the day forays available throughout the country.

This is Insect - Fungus year and an important symposium on this subject will be held in London in September; a workshop on the Laboulbeniomycetes at CMI is planned for November, and three articles, giving much new information are to appear this year in *The Mycologist*. The first is included in this issue and is an illustrated account of the spectacular agaric genus **Termitomyces** from tropical Africa (p111), describing the symbiotic relations these mushrooms have with termites. Further major articles will appear in October.

An account of the **Société Mycologique de France** (p120), the oldest and senior national society, introduces a new series on *Mycological Societies of the World*. Also starting this month is the first of several articles on **British Mycologists** (p126), with the *Rev M J Berkeley*, the 'Father of British Mycology' taking pride of place.

The problems confronting taxonomists dealing with nomenclature will be considered once again at the *14th International Botanical Congress* in West Berlin. We publish a mycological **Code of Practice** (p101) to help overcome some of these difficulties.

Finally, the debate on the **decline in teaching of taxonomic mycology** was initiated at a BMS roundtable at the 14th International Congress of Microbiology last year. This important discussion continues (pp99,110) in the pages of *The Mycologist*.

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CORRESPONDENCE

Teaching Fungal Taxonomy

Employment prospects have led to the expectation that, for most students in most subjects, the undergraduate course is an 'education' rather than a vocational training. Such an outlook affects teaching, both in the style and content of what is taught and how it is received and assimiliated by students. There are gains and losses with this shift of emphasis. One of the gains is the special study or project, which may occupy a considerable amount of the final year. The able student's enthusiasm and personal commitment to the project lifts his or her performance outside the project and the less able student usually benefits from working with experienced teams.

However, not every student will choose a mycological project and the project may not depend on the morphological acumen that must be a mainstay of the taxonomist. One of the probable losses from this intensive and time-consuming part of the course is that the student seldom accrues the in-depth training of observational skills from many different courses. Two or three decades ago mycologists could rely and build upon the morphological and anatomical skills taught throughout elementary courses in biology departments. As biology as a whole develops and advances this aspect of fundamental training has to be curtailed. Yet it takes time to foster and develop in students the skills of observation and communication of observations. It is inevitable that an appreciation of fungal morphology and taxonomy has suffered. Although the amount of mycology teaching offered has not shown a substantial decline, the opportunities of choice have increased so that the individual student may well receive significantly fewer contact hours with mycology. This may not be evident from the data collected by Dr Jeffries.

We must also recognise that there exists a 'buyers' market' for prospective students. The prospective student body is encouraged, and has the opportunity to seek for what is perceived, from that standpoint, as the exciting university. Within the University there is the freedom for students to change courses and select units. Student members are vital to departmental finance and staffing. Most scientists, including mycologists, are keen to discuss the newest and most original contributions to their discipline. With finite time the classical approaches receive less attention external examiners have even been known to chide lecturers for evidence of such approaches. Systematics is still well-taught: can it remain so, and will it be so well-learnt?

Educated biologists have a breadth of experience that should make them useful in many walks of life. Specific job opportunities in specialised branches of biology are too few to justify the provision of university and polytechnic departments of targeted vocational training 'on spec'. Such vocational training would not constitute the best education for the majority of students. It should be recognised by both the UGC and industry that vocational training must be provided in addition to a general undergraduate education and not as a substitute.

There is another reason why specialist vocational training should be separate from an undergraduate course. The selection of a centre for undergraduate study is made on different grounds from those that would be important for vocational training. Few biology students can anticipate their aptitude for areas of professional specialisation before entry. No university or polytechnic department could offer all kinds of specialist training; few could or should offer essentially comparable vocational programmes. There must be an opportunity for change of institution.

Clearly, there are demands, both from within the UK and abroad, for vocational training in fungal taxonomy. It is increasingly obvious that this must involve taught postgraduate study. This training could be done 'in house' in a commercial organisation, where the remit would tend to be narrow, or in a university as a MSc

degree. A specialist degree taught at one or two institutions would constitute the most cost-efficient solution for all employers. Both the UGC and industry should recognise this fact by appropriate funding and sponsorship.

M W Dick
Dept Botany, Univ Reading
(Ed — Turn to article on p110)

January's Mycologist

Congratulations on The Mycologist from an ex-Editor of the Bulletin. *It is full of interest and of course colour helps enormously. A few more profiles and even I may learn an agaric or an asco in due course. I am sure you are on to a good thing here. All good wishes.*

Mary Noble
Bonnyrigg

I would like to congratulate you and all responsible for the 'new' Mycologist *journal. The format is most excellent, with colour and photographs an added interest. I read it from cover to cover and I'm sure it can't fail to please everyone. Wishing all involved every success for the future.*

Douglas Wright (Associate)
Worksop

Congratulations on the first issue of The Mycologist. *A very lively, attractive publication with lots of interesting articles.*

M Rotheroe
Aberystwyth

May I make a couple of suggestions on the 'Profiles of Fungi'? Firstly the use of colour: I was disappointed to see two species featured for which coloured illustrations are already widely available. Secondly the formal descriptions: couldn't these be replaced by the appropriate journal reference? This would leave more space for commentary on related species, hints on field recognition etc. Compare the treatment of Xylaria *by Dave Minter in the final number of the BMS Bulletin, informal but precise, and telling the amateur how to recognise several species he would never otherwise have heard of. In short, these profiles will be too infrequent ever to build into a professional reference library, but I believe they could form the basis of a valuable series of educational notes for the amateur. Anyhow, whatever you do, I wish long life to* The Mycologist.

A Henrici
London W11

I am a subscriber to the new Mycologist *magazine and welcome this as source of information and challenge to my very amateur interest in mycology.*

R Brown
Manchester

My congratulations on the first issue of The Mycologist. *You have immediately succeeded in conveying the fascination of fungi in a way that will attract the wider audience you seek. The golf balls on the back cover got us off to splendid start — keep it up.*

D Nelson
Bowness-on-Windermere

Liquamen

The interesting gastronomic article by Roger Phillips in the first issue of The Mycologist *raised the questions of finding a modern substitute for the* liquamen *of classical Rome. There is an easy answer: the fermented fish sauces widely used in S E Asia and obtainable from Chinese groceries are almost exactly the same thing. They go under names such as* nuoc mam *(Vietnam),* nam pla *(Thailand) and* patis*(Philippines). It is a curious fact that the production of these sauces, rich in protein as well as flavour, died out almost completely in the Mediterranean area after the classical period but still flourishes in most S E Asian countries.*

Alan Davidson
London SW10

Short communications are welcomed but the Editors reserve the right to edit the longer ones. All letters should be sent to the Senior Editor.

INTERNATIONAL COMMISSION ON THE TAXONOMY OF FUNGI (ICTF): CODE OF PRACTICE FOR SYSTEMATIC MYCOLOGISTS

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Fifteen points which mycologists dealing with the systematics of Fungi (including yeasts) are encouraged to adhere to in their work are presented as a Code of Practice for Systematic Mycologists. Adoption of these will encourage both stability in nomenclature and uniformity in approaches to the descriptions of Fungi.

The IUMS International Commission on the Taxonomy of Fungi (ICTF) has recently started a series of articles on 'Name changes in Fungi of microbiological, industrial and medical importance' (2). These articles bring to the attention of workers in applied fields important nomenclatural changes of strains of applied value. Nomenclatural changes arise either through reclassification of certain groups of Fungi, or through the correction of errors in identification of specific isolates. As noted in the first article of that series, there is a great responsibility placed on the taxonomist to ensure that changes in classification of Fungi and ensuing name changes are based on sound taxonomic practices. Disagreements among systematists on the appropriate name for a fungus usually arise when arguments for name changes are ill-conceived or poorly documented, and these disagreements do little to enhance the reputation of taxonomic work in applied fields. Although guidelines to good taxonomic practice have been presented elsewhere (4,7), the Commission has identified particular problem areas and presents here some practical guidelines to encourage both stability in nomenclature and some uniformity in the descriptions of Fungi.

1 Before describing a new genus or species, authors should wherever possible consult other specialists in the group concerned. It is a salutory thought that over half the Fungi described have been described previously, and that of those almost the same proportion are placed in genera later considered as inappropriate (1). The literature in mycology is already too full of names that were not required and authors should take great care that unnecessary names are not created.

2 Where possible, genera in families and species within genera should be separated by similar types of characters. In describing a new genus, mycologists should endeavour to ensure that the characters separating it are comparable to those distinguishing other genera in the same family. For example, if in one family ascospore ornamentation is generally diagnostic at the generic level while ascospore septation varies within genera, it could be unwise to accept a new genus on the basis of differences in ascospore septation alone; in contrast a distinct ornamenta-

This article first appeared in *Microbiological Sciences* **4:** 83-86 (1987).

tion type might merit recognition as a separate genus. The same principle also applies to descriptions of species within a genus. It is therefore necessary to study the taxonomic criteria in use in a particular group before describing as new any fungi within it.

3 New taxa should be described only after a direct comparison with a range of material of allied taxa. Particularly for individuals working away from major mycological centres, there is a tendency to rely on published descriptions rather than on comparison with actual specimens or cultures. Published reports alone can be misleading and may not be representative or include the full range of variation seen in a taxon. There is no adequate substitute for the direct comparison of collections or cultures.

4 The type of a nomenclatural synonym is represented by the type specimen of the basionym and this specimen should be examined prior to proposing the transfer. Occasionally the name of a Fungus is changed either by transfer of a species to a different genus or by transfer of an infraspecific taxon to a new rank. When a new combination is proposed, the author must provide a full bibliographic citation for the basionym, which is the name on which the new combination is based (the epithet-bringing synonym). The type of a nomenclatural synonym is represented by the type specimen of the basionym. An author proposing a new combination should ensure that his proposal is based not on a study of material named as that taxon by workers other than the original author of the name, but on actual examination of the type material, in conjunction with study of the original description. Authors should satisfy themselves that material labelled as the type specimen is actually the material on which the original description has been based, particularly in the case of dried cultures (see no 6).

Information on the type specimen, including its source, nature (i.e. holotype, isotype, etc) and herbarium location should also be considered mandatory. If the type material has not been examined by a recent author, illustrations of its microscopic features are also highly desirable. Implementation of this procedure will avoid the transfer of taxonomic inaccuracies from one genus to another.

5 Proposals for taxonomic synonyms should be justified by adequate documentation. Taxonomic synonyms are created when names based on different nomenclatural types are judged to refer to the same taxon. There appears to be an increasingly common practice of proposing synonymy of taxa without supporting evidence of examination of the type material. Although this practice is not prohibited in the Code, it can lead to unstable nomenclature since proposals for taxonomic synonymy are based solely on the judgement of the taxonomist. For this reason, authors should always provide documentary evidence, including illustrations of the relevant type materials, to support arguments for synonymy. This would provide other workers with an opportunity to evaluate the merits of the proposal and to determine whether the proposal was based on a misinterpretation or misidentification. If no evidence is provided, no evaluation can be made by other mycologists unless relevant types are obtained for examination by them. This results in uncertainty as to whether particular changes should be accepted or not.

This documentation will also reduce the number of subsequent examinations (with consequent destruction) of the type material other mycologists need to make.

6 The type of a species is a specimen; the designation of living cultures as nomenclatural types for Fungi is not allowed under the Code. Art 9.1 of the Code states 'The type *(holotype, lectotype* or *neotype)* of a name of a species or infraspecific

taxon is a single specimen. Despite arguments (17) in favour of allowing living type material for Fungi, the recommendations were not endorsed by the Sydney Congress (6,8). Designation of living material as a nomenclatural type constitutes invalid publication of a new taxon. Cultures derived from isolates which have been dried to form nomenclatural types are best referred to as 'ex-type' (16). Mycologists should note that in publishing taxa difficult to preserve, illustrations or even drawings can be designated as holotypes, a practice workers with cultures on freshwater algae frequently adopt. Where cultures are obtained, they should of course be preserved also in the living state when possible (see no 7).

7 The nomenclatural type specimen must be permanently preserved in a recognised institutional herbarium. Isotype specimens and 'ex-type' living cultures should be deposited in several service culture collections. One cause of instability in fungal nomenclature is the loss or destruction of preserved type material. A description of a new taxon should indicate the nature of the material (i.e. whether a dried colony derived from a culture, or some other material), and location of the herbarium in which the holotype has been preserved. If sufficient material is available, isotype specimens (duplicates of the holotype) should be distributed to several major herbaria on different continents. Holotype material should always be lodged in recognised institutional herbaria, and never be retained in personal private collections where its future is uncertain and from which loans may not be easily obtained by outside workers (6,15). In addition, wherever practicable, holotype specimens should be deposited in national collections in the country from which they originated. The absence of type material of native species in herbaria of less developed countries is a constraint to the development of mycological knowledge in these countries. In 1965 UNESCO adopted a recommendation to Governments in which type specimens were regarded as a part of the 'cultural heritage' of all nations (3). Cultures obtained from the holotype also should be deposited in several culture collections and the location of these deposits indicated in the original description. For Fungi of importance to workers in applied fields, this practice is particularly to be recommended. In some instances, workers at different institutes have prepared dried colonies from cultures received for deposit as 'type strain' or 'type culture'. These dried colonies have then been labelled as 'type specimen'. However, since specimens prepared in this way are not isotypes verified by the original author, this practice is to be avoided since it can be misleading to other workers. Such specimens can advantageously be labelled 'derived from a culture of the type'. It should also be cautioned here, that widespread distribution of the specific epithet applied to a new taxon, prior to its valid publication, is to be discouraged.

8 Type material should always be treated with care and retained intact. Many type specimens have been damaged beyond recognition by indiscriminate use. These are an irreplaceable resource and so must always be handled with the greatest of care. Repeated slide preparation may destroy a specimen and some mycologists remove fragments (with or without authorisation) and retain them in their own personal or institute collections. The stolen fragments can also cause problems for monographers needing to research several places. See Pfister & Rossman (15) for a more detailed consideration of the 'kleptotype' problem. Slide preparations, and where appropriate also semi-thin sections and SEM stubs, should also be preserved and retained with the type. Where several sections are made a few can often be retained in other institute herbaria.

9 In descriptions of new taxa, the Latin diagnosis should be accompanied by comprehensive descriptions and good quality illustrations of the important microscopic characteristics. The importance of comprehensive descriptions, rather

than short diagnoses distinguishing the new taxon from previously published ones, cannot be overemphasised. Although line drawings are acceptable and probably easier to prepare, good quality photographs are less subject to interpretation. The use of both types of illustration is to be recommended especially for Hyphomycetes (11).

10 The starting date for ALL Fungi is now 1 May 1753. The application of names of Fungi is governed by a set of principles outlined in the International Code of Botanical Nomenclature. The latest edition of the Code (6), adopted at the Sydney International Botanical Congress in 1981, introduced 1 May 1753 as the starting point date for all Fungi and not only Myxomycetes and lichen-forming taxa as had previously been the case. This superceded the later starting point date of Persoon's *Synopsis Methodica Fungorum* (1801) for Uredinales. Ustilaginales and Gasteromycetes and Fries' *Systema Mycologicum* (1821-32) for all other non-lichenised Fungi. With the earlier starting point date, the valid publication of a name now reverts to the date of its original publication. This change should provide greater stability in fungal nomenclature especially for names introduced prior to the old starting point dates, since it is no longer necessary to search sometimes obscure literature to determine which author first took up usage of the name after the critical date. Where reversion to the earlier starting point date could result in nomenclatural changes of taxa sanctioned in the works of Persoon or Fries, the new Code allows these 'sanctioned names' to take priority over earlier published names. Sanctioned names can be indicated by use of ':Fr.' or ':Pers.' following the citation of the original author of the name when this is felt to be desirable as in formal nomenclatural papers (9). The effects of the changes in the starting point date have been discussed in detail in recent articles (8,12,13,14).

11 Before unfamiliar or new generic names are introduced, particularly for names in common use, the use of conservation procedures should be investigated. Under the principle of priority, the taxa from family to genus inclusive, the discovery of an earlier valid name must take priority over another name applied to the same taxon of equal rank (except for sanctioned names as described under no 10). The principle of conservation allows for retention of a well-established generic of family name against replacement by a less well-known name. Applications for conservation are published in *Taxon*, considered by the Special Committee for Fungi, and approved at meetings of the International Botanical Congress. Under the Sydney Code, conservation procedures can now also be applied to the names of *species of industrial or commercial importance* and this should be applied to some Fungi (16).

12 Under the provisions of the Code, epithets for anamorphs are not normally transferable to teleomorphic genera. The exception to this rule occurs when a taxon has been named in an anamorphic genus, but the type specimen and original description includes elements of both the sexual (teleomorphic) and asexual (anamorphic) phases. Where *both* these conditions are satisfied the Code allows for the transfer of the epithet to a teleomorphic genus. A new epithet must then be created for the anamorphic phase. (For further discussion see 18,19).

13 Teleomorph-anamorph connexions should be established by single-spore isolations wherever practical. Co-occurrence is no substitute for proving connexions by the culture of anamorphs from single ascospores or basidiospores. Teleomorph-anamorph connexions, where these are known should be emphasized, and the evidence for the connexions discussed.

14 The application of generic names to pleoanamorphic Fungi with distinct conidial types should be based on the conidial type which is the most distinct and stable. Problems in establishing anamorphic genera based on pleomorphic

anamorphs have been discussed elsewhere (2,5,11,12). It is now generally recognised that it is undesirable to apply a different generic epithet to each different developmental type. For pleoanamorphic Fungi with conidia of distinct types, the scientific name should be applied to the conidial type which is the most distinct and/or stable (2,4,5,10).

15 Publish new taxa and name changes in journals with an international circulation, wherever possible, and ensure reprints and copies of other publications are sent to the major indexing publications *(Biological Abstracts, Index of Fungi)*. All too frequently important changes are not picked up quickly by indexing publications because they are published in unusual places and this can delay appreciation of them by the mycological community at large. Authors bear some responsibility for ensuring the current awareness of their works.

We are indebted to our fellow members of the ICTF and also to Dr O Constantinescu, Dr P F Cannon and Dr O Eriksson for constructive comments and discussions during the preparation of this paper.

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PLEUROTUS CITRINOPILEATUS, ONE OF THE FAVOURITES

ERAST PARMASTO

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Opinions vary in different parts of the World on the edible qualities of fungi. In my homeland in Western Estonia, the favourites in my youth were *Lactarius rufus* (Scop.:Fr.) S F Gray and *L. torminosus* (Schaeff.:Fr.) S F Gray while the mushroom guides in some western countries warned that these same species were poisonous. A special method of cooking involving a boiling procedure before frying is often used in many East European countries. All the boletes, including *Boletus edulis* Bull.:Fr. were regarded with suspicion in Western Estonia, while in Eastern Estonia, only some 150km to the east, and in the whole area for at least 1000km further east, *B. edulis* was greatly esteemed. In the Soviet Far East, in the Primorskij Territory and the southern parts of the Chabarovskij Territory and also the Amurskaja Region, *Pleurotus citrinipileatus* Singer is considered by the local people to be the best edible fungus. They call it *'il'mak'* which means elm's (mushroom).

Pleurotus citrinopileatus was thought by Singer (1943) and later authors, Michailovski (1974) and Hilber (1982) to be closely related to *P. cornucopiae* (Paulet) Roll. Both species grow mainly on *Ulmus* wood but differ in colour and spore size and in the number of pilei growing from a single fungal stipe. *Pleurotus citrinopileatus* may be found from the end of May until October on logs and dead trunks of all *Ulmus* species growing in the SU Far East and also some other deciduous trees e.g. *Carpinus*. It is common everywhere in the regions already mentioned where suitable substrates occur. It is also found in Hebei and Jilin Provinces of China (Tai, 1979). Large numbers of basidiomata may grow on a single log or trunk and the pilei can be picked up to 20 times from the same log in one season (Dupliscev & Sivasov, 1982). According to these authors a season's yield per one cubic metre of elm wood is 17-22kg, and in one case even 72kg. The fungus may be boiled, fried, pickled or dried. Some local people boil it for 15 minutes and then fry it, but I have fried and eaten this fungus many times without pre-boiling and found it very tasty and without any unpleasant after effects.

The published descriptions of *P. citrinopileatus* are rather scanty and further information is given here:

> Pilei usually (3-) 5-40, rarely up to 50 or even 80 grow on a single fungal stipe, 5-10cm high and 3-7cm diam. The *pilei* are rounded with excentric and central stipes, almost funnel-shaped, 4-15cm diam, thin; upper surface almost invariably vivid pure yellow (Rayner, 1970:no 14), slightly paler towards the margin and when ageing. The *context* is only 0.5-2.5 (-4)mm thick, yellowish-hyaline. The *lamellae* are densely crowded (12-16 per mm of pileal margin), 5-10mm in depth, decurrent, yellowish white. The basidiomata have a slight to strong smell of fish when fresh unlike the strong scent of anise which characterises *P. cornucopiae*. The spore print is pale pinkish and the mean spore range is 7.4-8.8 × 3.0-3.6µm. Q = 2.2-2.7. These figures represent the mean of 24 spore prints.

The spore size and form seem to be clearly distinct from those of *P. cornucopiae*. According to Hilber (1982) the range of means in four specimens was 8.1-8.3 × 3.7-4.1µm; Q = 2.1-2.2. He described occasional thick-walled skeletal hyphae, 3.7-7.4µm diam in the pileal context and hymenophoral trama of *P. cornucopiae* and noted their absence in the single specimen of *P. citrinopileatus* that he studied. I have examined numerous collections of *P. citrinopileatus* and found that it has a distinctly dimitic hyphal system. There are long (-500µm or more), thick walled, slightly undulate or straight and somewhat nodulose skeletal hyphae,

Figs. 1-4. *Pleurotus citrinopileatus* on *Ulmus laciniata*. Primorskij Terr., Lazo Nat. Res., near America Hamlet (TAA no 107451).

2.5-5µm diam, in the stipe cutis and more curved, occasional skeletals, 3-8µm diam, in the context of the pileus and stipe, and rarely in the hymenophoral trama.

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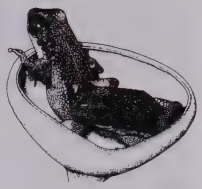
FUNGI IN SCHOOLS



for
CHILDREN
TEACHERS
PARENTS

and other interested parties

FIRST FORAY

In January we looked at a mushroom bought from a shop and in April we tried to make spore prints also from a 'shop mushroom' because at this time of year there is not very much to find even if you do go out and look in the woods and fields.

Things get more exciting from about July and August — the time will depend on the weather which should be 'not too dry' and 'not too wet'; 'not too hot nor too cold', i.e. it has to be 'just right'. By September there should be plenty of fungi for you to find. This is the season of the **Fungus Foray** which is just a special name for a walk through the woods to look for fungi. If you have never been on one before you may wonder what you should take with you.

The first essential is some **FOOD** as you may be out all day and it is hungry work looking for toadstools.

The second is **WATERPROOF CLOTHING** (mac and wellies) as it does often seem to rain, this may help to make the toadstools grow but also makes the paths very muddy.

The third (some people may say I have my priorities wrong — you can look this word up in a dictionary) is your **COLLECTING GEAR**. You will need:

1 **a small flat-bottomed basket** — if you take one that is too large it can get rather heavy by the end of the day.

2 **a dibber or small stick** — this is to help you dig up the toadstool gently and carefully and not just snap off the stem like a beginner. The experts do not like to be asked to name toadstools with broken stems and can get quite fierce if often asked to do so.

3 **a note book and pencil** to write down names and other important things. There is even a special one with waterproof paper that I found at one shop.

These are illustrated in the photograph on the back cover.

To help you start on your first **Fungus Foray** there will be a special section for you at the Oxshott foray, to be held on Sunday morning, 27th September, 1987. Look, in the parking place, for a stick with a flag showing the two friendly frogs (see top of page). We hope that one of us will be able to draw the frogs on a flag — but even if we cannot — the stick will be there.

Next time: Truffles, Dogs and something to eat

Sheila M Francis

THE TOP TWENTY EDIBLE FUNGI?

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It is well known that people differ enormously in their reactions to smells and flavours. Hence the difficulties authors on fungi encounter in describing the former and assessing the qualities of the latter. Nevertheless, most popular writers do make an effort to distinguish categories of excellence among edible fungi. No doubt they take texture into account too.

In an attempt to compare different opinions on the matter, I compiled, from a number of sources (see Primary References), a list of fungi described as edible. At the same time I categorised these as 'excellent', 'very good', 'good', and 'tolerable' according to the comment made. Sometimes this was a straightforward process but, usually, I had to interpret a wide range of terms expressing different degrees of enthusiasm. The results, therefore, are necessarily somewhat subjective. Roughly speaking, 4 points were allotted to species eliciting unambiguous delight, 3 to those highly praised but with some slight qualification concerning texture, method of cooking etc, 2 to those approved of without obvious enthusiasm and 1 to those grudgingly admitted to be 'edible'. Regrettably, this method excluded a number of texts using three or fewer categories usually in symbolic form.

The final list amassed over 450 British species. There was little evidence of cribbing and wide disagreement, particularly about the less common species. The accolade for greatest enthusiasm, most detailed comments and evidence of personal experience must go to *The Encyclopedia of Mushrooms* by Dickinson & Lucas. There was general agreement about the 'best' species so that few surprises will be found in the Top Twenty printed here. It has been compiled by adding the scores from the eight texts in the references with the addition, from Rinaldi & Tyndalo, of a categorisation by Umberto Nonis (pp 253-254).

Place	Name	Score
1	*Boletus edulis*	34
2	*Agaricus arvensis*	33
3	*Agaricus campestris*	32
4	*Calocybe gambosa*	30
5	*Macrolepiota procera*	29
6	*Morchella esculenta*	28
7	*Cantharellus cibarius*	27
	Langermannia gigantea	27
9	*Clitopilus prunulus*	26
	Russula cyanoxantha	26
11	*Coprinus comatus*	25
	Hydnum repandum	25
	Lepista saeva	25
14	*Lepista nuda*	24
15	*Macrolepiota rhacodes*	23
16	*Boletus badius*	22
	Hygrophorus pratensis	22
	Marasmius oreades	22
	Russula virescens	22
20	*Agaricus silvicola*	21
	Craterellus cornucopioides	21
	Kuehneromyces mutabilis	21
	Pleurotus ostreatus	21
	Sparassis crispa	21

I am sure that most experienced mycophagists will find themselves disagreeing with this order of merit to a greater or lesser degree. If you would like to contribute to the compilation of a list based on the actual experience of Members and friends, please send, in order of merit, your own list of **Five Favourite Fungi** to me at the above address. If you have non-Member friends with sufficient gastronomic experience, their lists will be welcome too. You should, please, restrict yourself to British fungi as we would like to reflect a national preference. This may well prove different from usual published material which seems bound to be influenced by continental tastes. Personally, I have no great liking for boletes and, although I have enjoyed them in France, have always found northern-growing chanterelles odourless, tasteless and tough, however cooked. In this conclusion I am supported by the late Gavin Maxwell (1960) though, from his description, I suspect he may have made the common error of confusing them with *Hygrophoropsis aurantiaca*. I find the scent of *Clitocybe nebularis* delightful, enjoy its full flavour and texture and, despite a sensitive stomach, have never suffered any discomfort from eating it. Neither, it seems, did M C Cooke (1884). *Pluteus cervinus* is almost universally denigrated but I like its nutty flavour and find it very palatable on toast. If such conclusions stir you to indignation, then I would like to have your list. Should the response warrant it, a further list, perhaps of your 'Hundred Best Edible Fungi' will be published in a future number of *The Mycologist*. Meanwhile, if you would like a copy of the top 100 species from my compilation, please enclose a s.a.e. with your favourite five.

CAUTION: Remember, unless you are absolutely sure of the identity of the fungus. **DO NOT EAT IT**. We cannot be held responsible for accidents.

Continued on page 125

THE DECLINE IN TEACHING OF TAXONOMIC MYCOLOGY IN UNIVERSITIES

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I was asked recently to organise a roundtable discussion of this topic at the XIVth International Congress of Microbiology (see Report in April issue) and accordingly I circulated a short questionnaire to 50 people involved in teaching mycology at different departments in UK Universities and Polytechnics. A summary of the 39 replies follows. Although no university awards degrees in Mycology as yet, Mycology is taught as a component of a variety of courses nationwide. Most biological science degrees contain at least one component of Mycology, and the subject features in most botany degree courses even though the Kingdom Fungi is widely accepted as a distinct entity. Several microbiology degree courses have taken over responsibility for mycology but the relative proportion in these courses varies considerably. Mycology also features in a small proportion of courses in applied biology, genetics, agricultural sciences, ecology/environmental biology and in M.Sc courses in microbiology, biodeterioration, and taxonomy.

In terms of the decline over the last 20 years in the amount of systematic mycology taught the following trends were noted:

Two institutions reported a significant increase.
Six institutions reported a slight increase.
Nine institutions reported no change in the amount.
Eight institutions reported a slight decline.
Nine institutions reported a significant decline.
Five institutions did not have information available.

This confirms that there has been an overall decline in the amount of systematic mycology taught, but this trend is not uniform. It was also apparent that most of these changes occurred 10-20 years ago, rather than in the last two five-year periods. Practical work in systematic mycology was also featured in most courses, usually between 8-16 hours in total (range 0-60 hours).

In contrast, the *total* amount of mycology teaching had increased in most institutions, resulting from two developments:

(a) Most mycology courses *per se* have evolved into 'biology of fungi' rather than the classical 'systematics of fungi'. The physiology, structure, ecology, genetics and biochemistry of fungi were now topics that have superseded the taxonomic aspects.

(b) Fungi have become important in relation to several other courses, and a remedial package of mycology has been inserted into many of these e.g. applied microbiology, molecular genetics, microbial ecology, and biodeterioration.

Thus as mycologists we can be pleased that the teaching of our subject is not in decline but that a healthy evolution of emphasis is occurring reflecting the advances being made in our understanding of fungal biology.

There were also opportunities on the questionnaire for additional comments, and most respondents took advantage. Several people felt that systematic mycology was still an important specialist area but one that may be better tackled by the introduction of more specific postgraduate courses similar to those already organised by the CAB International Mycological Institute. In addition, concern was expressed that many students were 'turned off' by large amounts of systematics, and preferred a broader treatment of mycology as more stimulating. Against this background, and the need to maintain student numbers, it seems inevitable that the decline in teaching of fungal systematics will continue.

I would be interested in receiving additional comments on this subject, either directly or via the letters column of *The Mycologist*.

THE GENUS *TERMITOMYCES* IN ZAMBIA

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The most detailed accounts of the intriguing, palaeotropical mushroom genus *Termitomyces* Heim, and its relationship with termites, are those of Heim (1977), mainly from central Africa, and Batra & Batra (1979), in India. *Termitomyces* in Nigeria (Alasoadura, 1966, 1967) and Thailand (Bels & Pataragetvit, 1982) are also well reported. Collins (1982) provided a useful, popular account. In Zambia, *Termitomyces* species typically have a short season, occurring only at the beginning of the rains, from late November to early January, and most numerous at the end of December. They seldom occur in great numbers and are highly perishable, becoming infested with fly and beetle larvae. Nevertheless they are eagerly sought and exhaustively cropped by mushroom hunters. Technical descriptions, and some illustrations, of the seven species so far identified in Zambia have been published elsewhere (Pegler & Piearce, 1980; Piearce, 1981a). The details of the very characteristic basidiome are depicted in Fig. 1. The one unifying character is their obligate symbiosis with termites of the subfamily Macrotermitinae. Zambia lies at the centre of distribution of the fungus-growing Macrotermitinae in Africa, where the symbiosis with *Termitomyces* apparently evolved before spreading throughout tropical Africa (Batra & Batra, 1979).

The main distinguishing features for the species are: basidiome size, pileus colour and texture, the form of the central umbo or perforatorium, and the presence or absence of velar remnants. These features are variable and depend upon the architecture, depth, size and nutritional status of the parent comb, and the resistance of soil. Great care is required to trace a delicate pseudorrhiza to its origin, and this effort can be further frustrated when termites consume large parts of it. For the epigeal species, comb material is deposited some days prior to fruiting, so the host termites are not necessarily in attendance, and in hypogeal forms the comb is sometimes vacated before basidiomes arise. Even if termite soldiers and workers are collected, there are problems in naming them: it is rarely possible to collect termite alates (winged reproductives) which can be associated unequivocally with collections of *Termitomyces* since in any one spot their seasons do not coincide exactly. However, there is a general coincidence of termite swarming and basidiome production, which may have some significance in the continued maintenance of the relationship. Johnson et al (1981) have investigated this matter, and discuss the alternative mechanisms that may operate to disperse both partners effectively in Nigeria. Basidiome production may somehow serve to enhance the vigour of the fungus populations of the termite combs, on which purely vegetative mycelia and conidia grow. The significance of fruiting can therefore be interpreted from evolutionary as well as a functional viewpoint.

All but one species collected in Zambia to date have been recorded from relict 'miombo' woodland around Kitwe in Copperbelt Province: *T. medius* Heim & Grasse, *T. clypeatus* Heim, *T. eurrhizus* (Berk.)Heim, *T. microcarpus* (Berk. & Br.)Heim, *T. schimperi* (Pat.)Heim and *T. titanicus* Pegler & Piearce occur throughout much of Zambia; and *T. letestui* (Pat.)Heim is very widespread, although not collected in the Copperbelt. *Termitomyces striatus* (Beeli)Heim. *T. globulus* Heim & Goossens, *T. robustus* (Beeli) Heim and *T. mammiformis* Heim probably also occur. *Termitomyces titanicus* is an extremely distinctive giant mushroom, familiar to all Zambians as marketed specimens at roadsides and in newspaper photographs, though only rarely encountered in its undisturbed state (Figs. 2,5). *Termitomyces schimperi* is identified from the scales on the pileus and stipe, and has transversely septate cystidia. Most Zambian collections are unusual in not exceeding 15cm diam, having a very short pseudorrhiza, and an indistinct, broadly umbonate perforatorium (Fig. 6). The annulus is inconstant. These basidiome differences probably result by arising from small, shallow termite colonies (Fig. 3) below level ground. At one site the maximum size of basidiomes in the annual crop steadily increased from 12cm to 20cm pileus diameter over a five-year period. In another area, of approximately 5m^2, a remarkable troop of 42 specimens, up to 10cm diam, appeared on one day arising from at least ten separate termite combs. *Termitomyces eurrhizus* typically has a brown, viscid and smooth pileus, and a long, tapering pseudorrhiza, up to 100cm, mostly covered by a black cortical layer. Only one specimen had an annulus. Two collections gave a pure white spore-print, whilst from another specimen it was clay-pink but with white areas. Under the

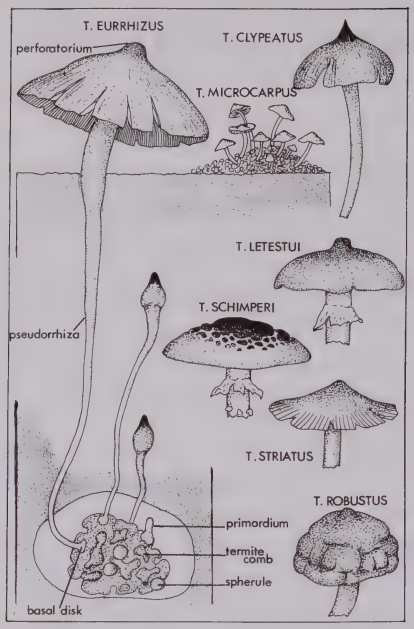

Fig. 1. Development of *Termitomyces* (after Heim, 1977).

microscope the 'white' basidiospores were normal, ellipsoid and easily dispersed in lactophenol mountant, whereas the 'pink' ones were collapsed and aggregated in dense clumps. Similar white and pink spore-prints have been obtained from *T. titanicus*, and the latter are products of moister, putrescent regions of detached pilei. In all species, pinkness of spores fades with age and drying but never to pure white.

Termitomyces clypeatus has a grey-brown, silky pileus and smooth, spiniform perforatorium. The pseudorrhiza may be either a single, long, white strand for isolated basidiomes associated with deeply subterranean termites, or a mass of spongy, fibrous, light or dark strands attached to shallow termite combs such as those near the surface of large mounds which produce dense clumps of basidiomes. My collections of *T. medius*, previously known only from Central African Republic, are intermediate between *T. clypeatus* and *T. microcarpus*, and grew in clumps from shallow termite combs via a mass of greyish, branched pseudorrhizas (Fig. 7). A shaggy stipe appears to be characteristic.

Heim (1958, 1977) has fully discussed *T. microcarpus* and variants (subgenus Praetermitomyces), which show epigeal development, lacking a pseudorrhiza, and have a regular hymenophoral trama. Typical *T. microcarpus* (Fig. 4) is recognised by its small size and appearing in spectacular swarms on large termite mounds, or occasionally from recent termite workings extruded over the ground. Variation suggests that basidiome form in *Termitomyces* depends very much on details of the symbiosis, especially the identity and behaviour of the host termites, and there may be comparatively little genetic difference between so-called species. In Zambia, curious successions of *Termitomyces* have been observed, one species apparently being replaced by others in some years. It is tempting to suppose that this phenomenon may be an expression of extreme species plasticity, stage-managed by the termites. Circumstantial evidence of this includes a record of *T. clypeatus* in Kitwe once developing from disturbed soil at the inordinate depth of 1.3m excavated a few days before to trace the termite comb from which *T. titanicus* had arisen. A better understanding of the ecological complexities of the symbiosis which itself only part of a grander 'trophic web' of the termites total environment (Malaisse, 1978), may lead to a more accurate definition of species and a more natural classification. It seems that termites still hold the real key to speciation in *Termitomyces* and any description of these fungi without reference ot the termite host, while valid within mycology, is essentially incomplete.

The results of macrochemical tests performed on fresh material in accordance with Watling (1971), show no marked or consistent differences between species except in the case of pyramidon, an oxidising agent to which the smaller species react most strongly. No doubt modern techniques of biochemical and genetic analysis would help to resolve species differences, but the necessary equipment and expertise is not available where the fungi occur. *Termitomyces* is surprisingly easy to isolate in pure culture from the basidiome context of the larger species. Such cultures of *T. medius*, *T. letestui*, *T. schimperi* and *T. titanicus*, and of *T. schimperi* isolated from spherules ('nodules' or 'mycotetes') on the termite comb, and grown on buffered yeast agar (Oxoid CM153) are indistinguishable in the appearance of colonies and hyphal structures, and in their growth rate. The cultures show no macro- or micro-reactions with pyramidon. Moist chamber incubation of comb material does not favour *Termitomyces* , but instead reveals the invariable presence of a *Xylaria* species, with a white, cottony mycelium which soon develops conidial stromata. Ascigerous states match descriptions of *X. nigripes* (Klotzsch) Cooke, a fungus that has also been collected directly from derelict ter-

KEY TO *TERMITOMYCES* SPECIES FOR ZAMBIA

1 Small, pileus usually less than 4cm diam:
  2 Pseudorrhiza present; pileus 2-4cm diam —**T. medius**
  2 Pseudorrhiza absent; pileus 0.2-2cm diam —**T. microcarpus**
1 Medium to very large, pileus usually more than 4cm diam:
  3 Perforatorium very prominent:
    4 Medium, pileus less than 10cm diam; perforatorium acutely conical or strongly pointed; annulus present or absent:
      5 Perforatorium rugose, acutely conical; annulus present —**T. mammiformis**
      5 Perforatorium smooth, strongly pointed; annulus absent —**T. clypeatus**
    4 Large, pileus more than 10cm diam; perforatorium pronounced, cylindric-clavate; annulus present —**T. letestui**
  3 Perforatorium indistinct or absent:
    6 Pileus often remaining unexpanded; annulus always absent:
      7 Pileus globose, pale brown with paler margin, perforatorium indistinct, broadly umbonate; stipe whitish —**T. globulus**
      7 Pileus bun-shaped, uniformly tawny brown, with concentric ridges; perforatorium mammillate; stipe greyish brown —**T. robustus**
    6 Pileus becoming flat; annulus inconstant:
      8 Pileus smooth, brown; perforatorium conical and bluntly pointed or umbonate; annulus sometimes present:
        9 Medium, pileus not more than 8cm diam; perforatorium broad, conical, pointed; pseudorrhiza pale —**T. striatus**
        9 Medium to large, pileus up to 15cm or more diam; perforatorium umbonate or small, conical, rounded; pseudorrhiza black in places —**T. eurrhizus**
      8 Pileus scaly or rugose, mostly white or greyish, with a low, broad umbo; annulus usually present
        10 Medium to large, pileus up to 30cm diam, creamy white with concentric rings of brown scales; annulus delicate, membranous —**T. schimperi**
        10 Very large, pileus up to 100cm or more diam, ash grey, with darker and brownish areas, rugose; annulus large, fleshy —**T. titanicus**

mite mounds. The role of the *Xylaria*, and other micro-organisms, in the *Termitomyces*-termite symbiosis deserves further study.

Termite associates

Doidge (1950) noted the association of *Termitomyces eurrhizus* (as *Collybia albuminosa*) with *Odontotermes badius* in South Africa. Coaton (1961), in the first published report to mention the *Termitomyces*-termite symbiosis in Zambia, recorded an undetermined species of the fungus on combs of *Ancistrotermes latinotus* at Choma, Southern Province. For recent progress see Table 1, this includes records of termites which are the first to be identified as partners of *T. clypeatus* and *T. titanicus*.

Also, the distinction of *T. medius* has previously been related to its apparent specificity for *Ancistrotermes latinotus*, its form being a consequence of the special structure of that insect's comb (Heim, 1958) — in Zambia the host termite (*Odontotermes*), produced a comb with a very similar appearance. Strict specificity in the *Termitomyces*-termite relationship is clearly lacking. Termites are nutritionally dependent upon *Termitomyces* for conversion of lignin in the comb to utilisable carbohydrate, and the fungus relies on the chemical and physical security of the comb for survival. Thus it has become a mutually obligate association. Being active wood-destroyers the termites are serious pests in forestry practice, and are deterred from Zambia's extensive *Eucalyptus* plantations by the use of aldrin-based insecticides. Such treatments are, among other objections, expensive, and cheaper alternatives need to be sought, perhaps by controlling *Termitomyces* with fungicides, the subject of continuing studies at the Tropical Development & Research Institute, London, or some kind of biological control to break the symbiotic link.

A better understanding of the *Termitomyces*-termite relationship is desirable when attempting to interfere with it. The eradication of termites from re-afforested areas means the total loss of a favoured mushroom, since *Termitomyces* species are extremely popular, with higher than average nutritional values (Mukiibi, 1973; Parent & Thoen, 1977, 1978; Crisan & Sands, 1978). There is therefore interest in prospects for artificial cultivation, which is a prime motivation for cultural studies (Chandra & Purkayastha, 1977), or perhaps enrichment of selected natural habitats.

Ethnologists may note that *Termitomyces* dominates the recorded folklore of mushrooms in Zambia (Piearce, 1981b), and features prominently in traditions elsewhere in Africa (Oso, 1975; Heim, 1977; Morris,

Figs. 2-5. 2, *Termitomyces titanicus* in natural habitat, on side of large termite mound; 3, comb of *Odontotermes* sp with spherules (potential basidiomes) of *T. schimperi*; 4, typical *T. microcarpus*; 5, *T. titanicus*, specimen collected by C W S Fisher and his children near Kitwe, 18 Dec 1978, which features in the *Guinness Book of Records* (weight 2.5kg, pileus 63cm diam).

Figs 6-7. 6, *Termitomyces schimperi* from a small, shallow termite comb; 7, *T. medius*, young basidiomes and pseudorrhizas.

6

7

1984). Moreover, *T. titanicus* (Fig. 5) has been given the distinction of holding the World record for size of a wild agaric.

This is published with the approval of the Chief Conservator of Forests, Zambia. I am also grateful to Mike Bingham for supplying material from Lusaka and Kawambwa Districts, and to Hudson Munthali and Harrison Sikombwa for field and laboratory assistance.

Table 1. Termitomyces *and their termite hosts in Zambia*

Termitomyces	Termite host
T. clypeatus	*Odontotermes lacustris*
	Macrotermes falciger
T. eurrhizus	*Pseudacanthotermes spiniger*
	Ancistotermes latinotus
	Odontotermes sp
T. letestui	unknown
T. medius	*Odontotermes patruus*
T. microcarpus	
epigeal form	*Odontotermes badius*
	Odontotermes sp
subepigeal form	*Odontotermes* sp
T. schimperi	*Odontotermes patruus*
T. titanicus	*Pseudacanthotermes spiniger*

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MICROBIOLOGY IN SCHOOLS ADVISORY COUNCIL (MISAC)

POSTER COMPETITION

'Microbes Helping the Environment'

A competition for individual pupils or classgroups to design a poster which demonstrates how microbes work to help the environment. The object is to encourage pupils understanding of microorganisms in our modern society.

1st Prize £30. 2nd Prize £20. 3rd Prize £10, with five runner-up prizes of £5.

Entry requirements: Posters should be A3 in size, with a maximum of 10 per school. Adjudication will take into account the scientific content, teaching element, presentation and an understanding of what a poster should be. Adjudication by: MISAC, Philip Harris Biologicals, Griffin & George, and Drala International. **The closing date is 1st April 1988.**

Entries should be sent to **Dr D J Hardman,** Institute for Biotechnological Studies, Research & Development Centre, The University, Canterbury, Kent CT2 7PD.

MYCOTECHNOLOGY

A MICROCOMPUTER CATALOGUE OF CULTURES

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In a previous paper (Fletcher, 1985) the use of a database system was described and the inference made that storage and retrieval of data on a microcomputer might only be possible with the application of expensive commercial software. This paper shows that it is feasible to write short programs in BASIC to achieve the rudiments of data handling: tabulation and retrieval. It is possible, therefore, to perform on the microcomputer some of the procedures previously carried out on the mainframe, by using simple programs tailored to a specific purpose. At RGIT, a culture collection is maintained and a program has been developed for a continuous catalogue of these organisms. The first program devised was one that would print a list of cultures and related data. A program in BASIC from Tebbe (1983) was modified to produce program PROJ1. This requires the operator to key in an abbreviated name of the fungus, its rate of growth and intensity of sporulation, for up to 40 organisms. These records relating to individual cultures are displayed on the screen. For the data to be printed as hard copy the program was altered to its final form PROJ3 (listing: Table 1) including the insertion of specific commands to the Epson FX-80 printer (example: Table 2).

In the listing, line 25 of PROJ3 sets the dimensions of the table to allow for up to 40 records (each representing a culture) and each record containing three columns of data. The data were input by lines 30 to 120 and the 'printed' (displayed on the screen) by lines 140-270. Line 275 keeps the data displayed for as long as required before transferring it to the printer to produce a hard copy via the 'on' and 'off' commands in 280 to 350.

Had text files been used these data could have been stored on disk and a second program used to retrieve specific records (Keeler, 1984; Robinson, 1984). This was considered an unnecessary complication at this stage, involving as it does either sequential or random-access files. The former can be accidentally 'overwritten' by the addition of new records unless precautions are taken, while the latter involves additional complex programming. (Text files are not stored in BASIC and therefore cannot be transferred back to the computer without an intermediate program).

Table 1. *Listing of program PROJ3*

```
 10 REM CULTURE COLLECTION;
    "PROJ3"
 25 DIM ARR$ (40, 3)
 30 INPUT "HOW MANY FUNGI?";N
 40 FOR I = 1 TO N
 45 PRINT "FUNGUS NO. "I": ";
 50 INPUT C$
 52 LET ARR$ (I,1) = C$
 55 FOR J = 2 TO 3
 65 IF J = 2 THEN PRINT "RATE OF
    GROWTH?"
 70 IF J = 3 THEN PRINT
    "SPORULATION?"
 90 INPUT T$
 96 LET ARR$ (I,J) = T$
100 NEXT J
110 PRINT
120 NEXT I
130 HOME : VTAB 8
140 HTAB 12: PRINT "CULTURE
    COLLECTION"
150 PRINT : PRINT : PRINT
160 PRINT : "FUNGUS";: HTAB 13
170 PRINT "ROG";: HTAB 25
180 PRINT "SPO"
200 PRINT
210 FOR I = 1 TO N
220 PRINT ARR$ (I,1);: HTAB 13
230 FOR J = 2 TO 3
235 IF J = 2 THEN PRINT ARR$ (I,J);:
    HTAB 25
240 IF J = 3 THEN PRINT ARR$ (I,J)
260 NEXT J
265 PRINT
270 NEXT I
272 PRINT
275 INPUT "PRESS X TO CONTINUE";
    X$
276 PRINT
280 PR # 1
288 A = A + 1
290 IF A = 1 GOTO 130
350 PR # 0
360 END
```

It was therefore decided to employ the much simpler expedient of storing all the data for the current culture collection in a single BASIC program: PORT, listed in Table 3.

PORT is dimensioned to store 15 records each containing three sets of information in the DATA lines 180, 190 and 200. These are then READ separately by lines 30, 60 and 90 respectively. A record may be retrieved and

Table 2. *Printout from program PROJ3 showing data relating to* Aspergillus fumigatus *and* Zygorhynchus moelleri

FUNGUS	ROG	SPO
ASF	.125	5
ASF	.139	5
ZYG	.74	1
ZYG	.84	1

ROG = rate of growth over 60 h, mmh^{-1};
SPO = intensity of sporulation on a scale of 0-5

Table 3. *Listing of program PORT*

```
 10 REM : PORT-SELECTION OF ANY
    3 ATTRIBUTES
 15 DIM FUNGUS$(15)
 20 FOR N = 1 TO 15
 30 READ FUNGUS$(N)
 40 NEXT N
 45 DIM ROG$(15)
 50 FOR N = 1 TO 15
 60 READ ROG$(N)
 70 NEXT N
 75 DIM SPO$(15)
 80 FOR N = 1 TO 15
 90 READ SPO$(N)
100 NEXT N
110 PRINT "FUNGUS OR ROG OR SPO
    TO BE SELECTED"
120 INPUT Z$
130 FOR N = 1 TO 15
140 IF FUNGUS$(N) = Z$ THEN PRINT
    FUNGUS$(N),ROG$(N), SPO$(N)
150 IF ROG$(N) = Z$ THEN PRINT
    FUNGUS$(N),ROG$(N),SPO$(N)
160 IF SPO$(N) = Z$ THEN PRINT
    FUNGUS$(N),ROG$(N),SPO$(N)
170 NEXT N
180 DATA ASF,ASN,BYS,BYC,CLH,
    EPR,EPS,GRW,PNC,PNR,PN2,PN32,
    P22,P60,ZYG
190 DATA .13,.42,.35,.23,.08,.09,.09,.30,.15,
    .11,.21,.22,.12,.29,.79
200 DATA 5,2,1,3.5,5,0,0,2,2.5,5,4,3,0,2.5,1
```

displayed directly by any one 'attribute' by the subroutine 110 to 170. An example of the running of this program is given in Table 4. While all the information has been written into the program, it would be possible to add to it as a culture collection increased. As yet, the system does not provide for an alphanumerical sorting of the list, but with the small numbers involved this is a minor limitation.

Table 4. *Running of program PORT to retrieve organisms shown in Table 2.*

```
RUN
FUNGUS OR ROG OR SPO TO BE
SELECTED?
   ?ASF
   ASF          .13          5
FUNGUS OR ROG OR SPO TO BE
SELECTED?
   ?.79
   ZYG          .79          1
FUNGUS OR ROG OR SPO TO BE
SELECTED?
   ?5
   ASF          .13          5
```

This work was carried out on an Apple IIe microcomputer with disk drive, but many other computers will perform similar functions. With the acquisition of a new mainframe computer at RGIT which will not handle System 1022[R] (Fletcher, 1985) it has become imperative to be able to use a microcomputer for small data bases of this kind. I wish to thank Miss K. J. Bayliss for carrying out some of these operations, and Miss Y. More for her advice on programming.

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TECHNIQUES FOR DEMONSTRATING AECIOSPORE DISCHARGE

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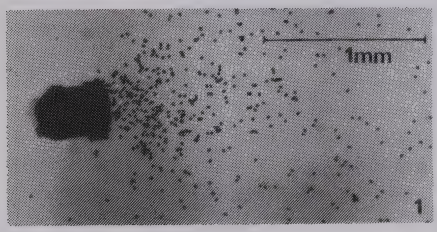

Fig. 1. Single dissected aecium of *Puccinia graminis* lying on an agar surface, showing discharged aeciospores.

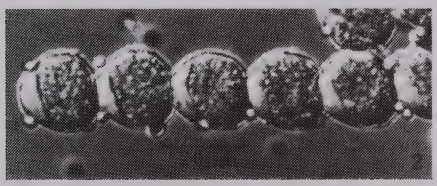

Fig. 2. Chain of discharged aeciospores showing the thickened aeciospore walls and hyaline spherical "pore plugs".

It is well-known that the aeciospores of many rusts are violently expelled from the aecia (Buller, 1924, 1950). Two techniques have been used to demonstrate this phenomenon, the first of which has been described by Buller. A leaf or leaf piece of a suitable host bearing aecia (e.g. *Berberis* with *Puccinia graminis* or *Tussilago* with *P.poarum*) is placed on moist filter paper in a Petri-dish with the open aecia facing upwards. Small lumps of plasticine or Blu-tack are used to fix a cover-slip about 1-3mm above the aecia, and the dish is mounted on a dissecting microscope using reflected light. Within minutes, aeciospores can be seen collecting on the underside of the coverslip, having been projected upwards from the aecia beneath. The second technique provides a more striking demonstration. The individual aecial cups of many common rusts are surrounded by a firm cylindrical peridium. These individual aecia can be dissected easily from the cluster of aecia, by a dissecting needle under a binocular microscope. The aecia are then placed sideways on, lying on the surface of a layer of tap-water agar on a microscope slide or directly on the surface of agar in a Petri-dish. Here again, aeciospore discharge follows within minutes, and in this case it is possible to measure the distance of discharge of the aeciospores from the mouth of the aecium (Fig. 1). Another advantage of this technique is that the presence of the tiny hyaline spherical 'pore plugs' (Dodge, 1924) or refractile granules (Littlefield & Heath, 1979) which separate the aeciospore chains can be demonstrated (Fig. 2). A film of the life-cycle of *Puccinia graminis* showing violent discharge and aeciospore pore plugs has recently been made and will be issued by IWF, Gottingen, West Germany, in 1987. The technique for demonstrating discharge from single dissected aecia has been used for three rusts, *P.graminis*, *P.poarum* and *P.coronata-avenae*, and there is no reason why it should not be successful with many others.

Dissected aecia can also be used to demonstrate the infection by aeciospores of the alternate host. Dissected aecia of *P.graminis* have been placed close to abaxial epidermal strips taken from seedling leaves of rye, *Secale cereale*. The epidermal strips are laid on a drop of distilled water over tap-water agar in a Petri-dish and aeciospores are discharged onto the strips. Germination takes place within an hour, and stages of germ-tube growth towards stomata and appressorium development over the stomata can be seen within 4 hours. Time-lapse sequences of germination and infection have been included in the IWF film.

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MYCOLOGICAL SOCIETIES OF THE WORLD

SOCIÉTÉ MYCOLOGIQUE DE FRANCE

Salle des Champignons, Paris, organized each autumn by the *Société Mycologique de France.*

As mycology was separating from botany during the late 19th century, Dr Lucien Quélet decided to bring together a group of mycologists for the purpose of producing a French fungus flora. On 5-6 October 1884, he formed the *Société Mycologique*, at Epinal, Vosges, in collaboration with Dr J B Mougeot and the pharmacists E Boudier and N Patouillard. The 128 founder members included many from overseas, such as J C Arthur, M J Berkeley, G Bresadola, M C Cooke, H W Harkness, K Kalchbrenner, P A Karsten, H Rehm and P A Saccardo. The following year, the name *Société Mycologique de France* was adopted, with the main object 'to promote and diffuse scientific, medical and applied studies in fungi'. The Society moved to Paris in 1888, at Quélet's suggestion, where for the last twenty years its address has been: 36 rue Geoffroy-Saint-Hilaire, F75005 Paris. It was appointed a national organisation of 'utilité publique' by decree in 1929.

Today, having celebrated its centenary, the Society comprises 2200 Members, 3 Honorary Members and 4 Associate Members, together with 60 affiliated local societies of which half are outside France. It is administered by a Council of 24 Members, each elected to office for three years. The Committee, within Council, consists of the President, two Vice-Presidents, General Secretary, and Librarian. Past Presidents have included such eminent mycologists as Quélet, Boudier, Patouillard, Prillieux, Delacroix, Hariot, Dangeard, and more recently Heim, Le Gal, Maublanc, Viennot-Bourgin, Romagnesi, Malencon and Boidin. Currently, the President is Patrick Joly (who is also Editor of the *Bulletin*), while Henri Romagnesi has been General Secretary since 1970, succeeding P Ostoya (1957-69) and A Maublanc (1908-12, 1920-56). The exceptional title of Honorary President is conferred on Prof R Kühner.

The main activities each year include an Autumn Congress at a provincial location or neighbouring country, a major public exhibition in Paris, regular workshops, forays throughout the year at weekends followed by identification sessions on Mondays. The Society houses a rich library allowing Members to learn by tutorials over the winter months. The pre-eminent journal *Bulletin Trimestriel de la Société Mycologique de France* is produced quarterly, now into volume 103, has provided a continuous atlas of colour plates since 1924.

Finally, following the 1984 centenary year, the Society has initiated the computerization of its taxonomic card-index and documents.

Dr Jacqueline Perreau, Vice-President
Muséum National d'Histoire Naturelle, Paris

DAY FORAYS 1987

In the following synopsis, all forays are listed chronologically with an indication in brackets of whether the foray is organised by the BMS or by another society, and if so, the number that foray is given on subsequent pages of this programme.

August

Sunday 23: Binton Hill, Warwickshire (1).

September

Saturday 5: Hermitage of Braid, Midlothian (2).

Sunday 13: Ashlawn Railway Cutting, Warwickshire (3).

Saturday 19: Glamis, Angus (BMS); Garnons Estate, Herefordshire (4).

Sunday 20: Alvecote Pools, Warwickshire (BMS); Ainsdale Nature Reserve, Lancashire (5); Afon Morlais, Dyfed (6); Mixed Woodland, Surrey/Hampshire (7).

Sunday 27: Oxshott Heath, Surrey (BMS); Holystone Woods, Northumberland (BMS); Cannock Chase, Staffordshire (8).

October

Saturday 3: Westonbirt Arboretum, Gloucestershire (BMS); Rivelin Valley, South Yorkshire (9); Checkendon, Oxfordshire (10).

Sunday 4: Gait Barrows Nature Reserve, Lancashire (11); Scarborough, Yorkshire (12); Aston Grove & Withycombe Wood, Warwickshire (13).

Saturday 10: Stanmore Common, Middlesex (14); Burton Mill Pond, West Sussex (15); Austacre & New Park Woods, Lincolnshire (16); Newtown Common, Hampshire (17); Day School on 'Mushrooms & Toadstools', Kent (18).

Sunday 11: Cannop Ponds, Gloucestershire (BMS); Menstrie Glen, Ochil Hills, nr. Stirling (BMS); Pembrey Country Park, Dyfed (19); Duncombe Park, North Yorkshire (20); Great Doward, Herefordshire (21); Taxal, Derbyshire (22); Epsom Common, Surrey (23); Day School on 'Mushrooms & Toadstools', Kent (24).

Saturday 17: Anston Stones Wood, South Yorkshire (BMS); Windsor Great Park, Surrey (BMS); New Forest, Hampshire (25).

Sunday 18: Moreton Morrell, Warwickshire (26); Dudmaston Park & Woods, Shropshire (27); Reffley Woods, Norfolk (28); Bagley Wood, Oxfordshire (29).

Saturday 24: Frensham Common, Surrey (30).

Sunday 25: Sandwell Valley, Staffordshire (31); Borsdane Wood, Lancashire (32).

Saturday 31: Newborough Forest, Anglesey (BMS).

BRITISH MYCOLOGICAL SOCIETY DAY FORAYS

Pat Livermore is the BMS Foray, Systematics & Structure Committee member dealing with our Day Forays. If you have any enquiries or suggestions to make concerning these meetings, please contact her at: 8 Durham Avenue, Scotforth, Lancaster, Lancashire LA1 4ED.

LEADERS OF BMS DAY FORAYS please write a **brief report** of your foray, listing any unusual species found, with observations of interest on the commoner fungi or the habitats visited. Please get this to **Peter Holland**, Flat 9, Pinewood Court, 23 Clarence Avenue, Clapham, London SW4 8LB by early December so that he can prepare it for publication in the next issue of *The Mycologist*.

Now that our computerised foray records database is running, it is more important than ever before to ensure that we get the records generated on our forays. Please complete record cards for each foray for entry on the database. They are available from **Bill Moodie**, 141 Wood Lane, Handsworth Wood, Birmingham B20 2AQ. Please return the completed cards to him.

GLAMIS, ANGUS — 'in the footsteps of the Rev Stevenson': Saturday 19 September (joint with the Botanical Society of Edinburgh), led by Roy Watling. Meet 10.45 on road leading into Glamis Village from the east, beside the estate track, to explore wooded habitats on the Glamis estate (it may be possible to visit the castle at the end of the meeting). Grid NO 391467.

ALVECOTE POOLS, WARWICKSHIRE: Sunday 20 September (joint with the Birmingham Natural History Society), led by Mr M J Austin. Meet 10.00 at the car park near the bridge at Alvecote. Grid SK 251044.

OXSHOTT HEATH, SURREY: Sunday 27 September, led by Brian Spooner and Paul Kirk. Meet 10.30 at Sandy Lane car parking area (this is a half-day foray). Special section for young children. Grid TQ 138616.

HOLYSTONE WOODS, ROTHBURY, NORTHUMBERLAND: Sunday 27 September, led by Gordon Beakes. Meet 10.30 in the Forest Walks car park which is located about 1km beyond Holystone village, near Rothbury. Grid NZ 947025.

WESTONBIRT ARBORETUM, GLOUCESTERSHIRE: Saturday 3 October, led by Alan Rayner and Geoff Stone. Meet 11.00 and again at 14.00 at the main car park near the entrance to the Arboretum, about 7km south of Tetbury on the Bath Road. Grid ST 856897. A car is needed as there is no easy public transport. The party will picnic at the car park where there is a snack bar which should be open.

CANNOP PONDS, FOREST OF DEAN, GLOUCESTERSHIRE: Sunday 11 October, led by Jack Marriott with the Forest of Dean Group — with Peter Orton as special guest. Meet 11.30 at Grid SO 607105, where there is plenty of parking space, good mixed foraying and a nice place to have a picnic lunch. After the foray participants may congregate at 'The Wilderness', a County Educational Field Centre, for a meeting and display of specimens. Send s.a.e. to Jack Marriott, St Swithin's House, Oldcroft, nr. Lydney, Gloucestershire GL15 4NF for map, route information to reach foray site, local accommodation, etc.

MENSTRIE GLEN, OCHIL HILLS: Sunday 11 October (joint with the Botanical Society of Edinburgh), led by Alan Bennell and Brian Coppins. Meet 10.45 at lane off A91 at the foot of the glen. Grid NS 849971. A chance to explore the lichenised and non-lichenised fungi of this dramatic wooded cleft in the southern face of the Ochils.

ANSTON STONES WOOD, SOUTH YORKSHIRE: Saturday 17 October, led by Chris Yeates, with Bruce Ing and Tony Lyon. Meet 11.00 at the layby at Grid SK 536828. Access is easy from both the A1 and M1, via the A57 which skirts the wood. The wood is a botanically excellent humid gorge on magnesian limestone. For further information and a detailed map, send a s.a.e. to Chris Yeates, Clifton Park Museum, Rotherham S65 2AA, 'phone 0709 382121 ext 3559.

WINDSOR GREAT PARK, SURREY: Saturday 17 October, led by Brian Spooner, Paul Kirk and Peter Dixon. Meet 11.30 in the Valley Garden car park, approximately 1km inside the Great Park — approach through a barrier (bring lots of 10p coins!) in Wick Lane, a turning off the A30 in Berkshire. Grid SU 987702. After the foray, meet at the Botany Department, Royal Holloway College, for tea and display of specimens. The Department is at 'Huntersdale' on the left, about 1km down Bakeham Lane, a turning off the A30 on the west side of the main college building.

NEWBOROUGH FOREST, ANGLESEY: Saturday 31 October, led by Richard Shattock. Meet 11.00 at Penlon roundabout car park to explore the sand dunes and forest. Grid SH 428648. After the foray, return to the School of Plant Biology, University College of North Wales, at 15.00 for post foray display and identification.

FORAYS OF OTHER SOCIETIES

Please send a stamped addressed envelope when writing for further details of any of the forays listed here. Parties of more than four people wishing to attend are asked to contact the organisers well before the event.

1 **BINTON HILL, WARWICKSHIRE.** Sunday 23 August (Birmingham Natural History Society, Mycology Section, c/o 141 Wood Lane, Handsworth Wood, Birmingham B20 2AQ), led by Mr M C Clark. Meet 10.00 at the disused railway station site on the A439 Stratford-upon-Avon to Evesham road. Grid SP 142532.

2 **HERMITAGE OF BRAID, MIDLOTHIAN.** Saturday 5 September (Edinburgh Natural History Society, c/o 41 Craigleith Hill Avenue, Edinburgh EH4 2JL), led by Dr P Mason & Mr A Bennell. Meet 10.30 at the Braid Road entrance to the Hermitage, Edinburgh. Grid not supplied.

3 **ASHLAWN RAILWAY CUTTING, WARWICKSHIRE.** Sunday 13 September (Birmingham Natural History Society, Mycology Section, c/o 141 Wood Lane, Handsworth Wood, Birmingham B20 2AQ), led by Mr A W Brand. Meet in the car park at the south-east end of the railway bridge; the entrance is on the B4429. Grid SP 517732.

4 **GARNONS ESTATE, HEREFORDSHIRE.** Saturday 19 September (Herefordshire Botanical Society, c/o Hollybush Cottage, Newton Lane, Kington, Herefordshire HR5 3NG), led by Peter & Stephanie Thomson. Meet 14.30 at Garnons Estate. Grid SO 401435. No dogs allowed.

5 **AINSDALE NATURE RESERVE, LANCASHIRE.** Sunday 20 September (North Western Naturalists' Union, c/o 12 Caldy Road, Handforth, Wilmslow, Cheshire SK9 3DB), led by Miss B Harthan. Meet 11.00 at Freshfield Station, Ainsdale. Grid SD 291084.

6 **AFON MORLAIS, LLANGENNECH, DYFED.** Sunday 20 September (Llanelli Naturalists, c/o Rhyd Deg, Maesybont, Llanelli, Dyfed SA14 7HG — joint meeting with the West Wales Trust for Nature Conservation), led by Dr P A Jones. Meet 12.00 at the forest walk car park. Grid SN 545053.

7 **MIXED WOODLAND, SURREY/HAMPSHIRE.** Sunday 20 September (Rowhill Nature Reserve Society, c/o The Field Centre, Cranmore Lane, Aldershot, Hampshire), led by Mike Waterman. Meet 14.30 at the Field Centre, 100m along Cranmore Lane, east from the A325. Grid SU 849500.

8 **CANNOCK CHASE, STAFFORDSHIRE.** Sunday 27 September (South Staffordshire Naturalists' Society, c/o 49 Lea Manor Drive, Penn, Wolverhampton WV4 5PH), led by Mr N A J Wilde. Meet 10.30 at Milford Common car park on the A513 Stafford to Rugeley road. Grid SJ 973212.

9 **RIVELIN VALLEY, SOUTH YORKSHIRE.** Saturday 3 October (Sorby Natural History Society, c/o Department of Botany, University of Sheffield, Sheffield S10 2TN), led by Dr Tony Lyon. Meet 11.00 at the car park, Rivelin Post Office, Sheffield. Grid SK 291873.

10 **CHECKENDON, OXFORDSHIRE.** Saturday 3 October (Reading & District Natural History Society, c/o 8 Pierces Hill, Tilehurst, Reading RG3 6RB), led by Mrs Judith Hack. Meet 13.30 on Kings Meadow Road, Reading. Grid SP 719739. Transport in members cars is usually available from the meeting point.

11 **GAIT BARROWS NATURE RESERVE, LANCASHIRE.** Sunday 4 October (North Lancashire Naturalists, c/o Beck House, Hornby Road, Caton, Lancaster LA2 9QR), led by Mrs Pat Livermore & Ernest Emmett. Meet 10.30 at car park through gate of reserve. Grid SD 478776. Leave M6 at Junction 35 and approach via Yealand, and look for foray sign by gate. Wear sturdy footwear — it's a limestone pavement. For further details contact Ernest Emmett on 0524 771013.

12 **SCARBOROUGH, YORKSHIRE.** Sunday 4 October (Scarborough Field Naturalists' Society, c/o 4 Whin Bank, Scarborough, Yorkshire YO12 5LE), led by C R Stephenson. Details yet to be finalised, for further information contact leader at: 35 Throxenby Lane, Scarborough. Tel: 0723 375891.

13 **ASTON GROVE & WITHYCOMBE WOOD, WARWICKSHIRE.** Sunday 4 October (Birmingham Natural History Society, Mycology Section, c/o 141 Wood Lane, Handsworth Wood, Birmingham B20 2AQ), led by Mr A W Brand. Meet at the road side on the lane from Wilnecote to Great Alne. Grid SP 140570.

14 **STANMORE COMMON, MIDDLESEX.** Saturday 10 October (Harrow Natural History Society, c/o 26 Edward Road, Harrow, Middlesex HA2 6QB), led by G Corney & E Stainthorpe. Meet 10.30 at Warren Lane car park, just off the A4140. Grid TQ 160935. Stanmore is the nearest station.

15 **BURTON MILL POND, WEST SUSSEX.** Saturday 10 October (Worthing Natural History Society, no address given), led by Oliver Buckle FLS. Meet 10.30-11.00. Grid SU 980180. This foray will concentrate on damp edges of the pond and soft areas nearby.

16 **AUSTACRE & NEW PARK WOODS, LINCOLNSHIRE.** Saturday 10 October (Lincolnshire Naturalists' Union, c/o 7 Willingham Road, Lea, Gainsborough, Lincolnshire DN21 5EH), led by H J Houghton. Meet 12.00 at the entrance to Austacre Wood. Grid TF 147723. Own transport is essential. These are mixed Forestry Commission woods which form part of the old extensive Bardney Forest.

17 **NEWTOWN COMMON, HAMPSHIRE.** Saturday 10 October (Botanical Section, Newbury District Field Club, Tysties, Woolton Hill, Newbury, Berkshire RG15 9UY), led by Barrie Bristow. Meet at the common. Grid SU 477633. Take the A34 south from Newbury; bear left at the Swan Inn and continue parellel to the A34. Park at the top of the hill on the left.

18 **DAY SCHOOL ON 'MUSHROOMS & TOADSTOOLS'.**Saturday 10 October (School of Continuing Education, University of Kent, Canterbury, Kent CT2 7NS), led by Peter Jeffries. Meet 10.00 at the Biological Laboratory, University of Kent. This is the first of two linked day schools. For further information, contact Ann Harrison at the School of Continuing Education.

19 **PEMBREY COUNTRY PARK, nr. LLANELLI, DYFED.** Sunday 11 October (Llanelli Naturalists, c/o Rhyd Deg, Maesybont, Llanelli, Dyfed SA14 7HG), led by Dr P A Jones & the Park Ranger. Meet 11.00 at the Country Park Visitors' Centre. Grid SN 401002.

20 **DUNCOMBE PARK, NORTH YORKSHIRE.** Sunday 11 October (York & District Field Naturalists' Society, c/o 9 Nursery Road, Nether Poppleton, York), led by Mr J Carr. Meet 11.00 at the Helmsley Entrance to Duncombe Park. Grid SE 612836. Private transport is needed.

21 **GREAT DOWARD, HEREFORDSHIRE.** Sunday 11 October (Herefordshire Botanical Society, c/o Hollybush Cottage, Newton Lane, Kington, Herefordshire HR5 3NG), led by Roy Perry (National Museum of Wales). Meet 10.30 on the road outside the Doward Hotel. Grid SO 539167.

22 **TAXAL, DERBYSHIRE.** Sunday 11 October (North Western Naturalists' Union, c/o 12 Caldy Road, Handforth, Wilmslow, Cheshire SK9 3DB), led by A & N Bamforth. Meet 11.00 at the lay-by on the A5002, Long Hill Road. Grid SK 008798.

23 **EPSOM COMMON, SURREY.** Sunday 11 October (Epsom Common Association, c/o 58 Hookfield, Epsom, Surrey KT19 8JG), led by Chris Whaley. Meet 14.30 at Christchurch car park by the B290, Epsom. Grid TQ 195609. The meeting point is about 10-15 minutes walk from Epsom Station: numbers are limited.

24 **DAY SCHOOL ON 'MUSHROOMS & TOADSTOOLS'.** Sunday 11 October (School of Continuing Education, University of Kent, Canterbury, Kent CT2 7NS), led by Peter Jeffries. Meet 10.00 at the Biological Laboratory, University of Kent. This is the second of two linked day schools. For further information, contact Ann Harrison at the School of Continuing Education.

25 **NEW FOREST, HAMPSHIRE.** Saturday 17 October (New Forest Section, Hampshire Field Club & Archaeological Society, c/o Woodis, Setley, Brockenhurst, Hampshire), led by Dr John Manners. Meet 14.15 at Brook Hill car park off the A35. Grid SU 265056. Bring wellies; 'bus from Southampton if necessary, otherwise use private cars.

26 **MORETON MORRELL, WARWICKSHIRE.** Sunday 18 October (Birmingham Natural History Society, Mycology Section, c/o 141 Wood Lane, Handsworth Wood, Birmingham B20 2AQ), led by Mr M C Clark. Meet 10.00 at the front of the hall. Grid SP 305555.

27 **DUDMASTON PARK & WOODS, SHROPSHIRE.** Sunday 18 October (South Staffordshire Naturalists' Society, c/o 49 Lea Manor Drive, Penn, Wolverhampton WV4 5PH), led by Mr E Blackwell. Meet 10.30 at the entrance to Dudmaston Estate. Grid SO 752886. The entrance is almost 1km north-west of Quatt on the A442 Kidderminster to Bridgenorth road; follow signs for the visitors' car park.

28 **REFFLEY WOODS, NORFOLK.** Sunday 18 October (Heacham & West Norfolk Natural History Society, c/o 111 Wootton Road, King's Lynn, Norfolk PE30 4DJ), led by Dr C Petch. Meet 13.00 at Reffley Woods. Grid TF 660223.

29 **BAGLEY WOOD, OXFORDSHIRE.** Sunday 18 October (Abingdon Naturalists' Society, c/o 51 The Motte, Abingdon, Oxford OX14 3NZ), led by Mr J Killick. Meet 14.15 at the Sawmill on the old Abingdon to Oxford road, 6km north of Abingdon. Grid SP 508021.

30 **FRENSHAM COMMON, SURREY.** Saturday 24 October (Alton Natural History Society, c/o 105 Southview Rise, Alton, Hampshire GU34 2AR), led by Mrs A Thomas. Meet 13.30 at Frensham Little Pond car park. Grid SU 857418.

31 **SANDWELL VALLEY, STAFFORDSHIRE.** Sunday 25 October (Birmingham Natural History Society, Mycology Section, c/o 141 Wood Lane, Handsworth Wood, Birmingham B20 2AQ), led by Mr W T Moodie. Meet 10.00 at the main car park. Grid SK 016915.

32 **BORSDANE WOOD, WIGAN, LANCASHIRE.** Sunday 25 October (North Western Naturalists' Union, c/o 12 Caldy Road, Handforth, Wilmslow, Cheshire SK9 3DB). led by Mrs J Riley & Mrs Stephenson. Meet 11.00 on the B5239, opposite Gerrard Arms. Grid SD 628076.

ADVANCE NOTICE

BRITISH MYCOLOGICAL SOCIETY
SIXTH SOCIETY GENERAL MEETING

University of Birmingham: 18-21 April 1988

This meeting will feature a 2.5 day main Symposium of invited papers on **NITROGEN, PHOSPHORUS AND SULPHUR METABOLISM** with a shorter Symposium on **TROPICAL FUNGAL ECOLOGY**. The provisional plans are for the meeting to start with an afternoon session (following morning registration) on the Monday, a keynote address at 14.00 hours beginning the afternoon session on Nitrogen and Phosphorus metabolism. A benefactors' Lecture will be given later in the afternoon, followed by the President's sherry reception, dinner and an evening poster session. On Tuesday the Nitrogen and Phosphorus metabolism symposium will continue. Wednesday will begin with a morning **open papers session** (for which offers of papers on **any aspect of mycology** would be welcome); symposium sessions on Sulphur metabolism will then resume to the mid-afternoon, followed by a concluding session on ecological aspects of Nitrogen, Phosphorus and Sulphur metabolism. The Symposium Dinner will be on Wednesday evening. The **Tropical Fungal Ecology** symposium will be held on Thursday morning and early afternoon. It is intended that the meeting will close at about 15.00.

Dr C E Caten (Dept Genetics, University of Birmingham, Birmingham B15 2TT) is the local Designated Organiser and offers of posters or spoken papers should be sent to him. Further information can be obtained from **Dr Caten** or the **Programme Secretary**.

ADVANCE NOTICES

BRITISH MYCOLOGICAL SOCIETY and LINNEAN SOCIETY OF LONDON
Novel Approaches to the Systematics and Identification of Fungi
13 November 1987

The Linnean Society of London is currently celebrating its bicentennary by organising a series of one-day meetings in collaboration with a wide range of learned societies in Britain. The British Mycological Society is involved through the above meeting, to be held in the Linnean Society's rooms at Burlington House, Piccadilly, London W1V 0LQ.

The Linnean Society expressed a wish that the meeting should not have a historical content, looking back over the past two hundred years of mycology, but instead should look to the future. Accordingly, an exciting programme has been arranged, giving details of recent research into fundamental problems of taxonomy with a range of innovative techniques, many of which are now in their infancy, but may well become established tools for the mycologist in the future.

Topics covered include the analysis of polyploidy by flow cytometry, DNA hybridisation, the investigation of relationships using serological techniques, the automated analysis of secondary metabolites, ultrastructural studies and techniques for staining fungal tissue for examination with the light microscope.

See **order form** in this issue of *The Mycologist*.

Autumn Taxonomy Meeting: Mycology, Microchips and Maps
Royal Botanic Gardens, Kew, 14 November 1987

The aim of this meeting is to explore the present and potential impact of computers on the world of fungal mapping and classification. As well as some lectures introducing aspects of the subject, a large part of the day will be devoted to practical demonstrations of various hardware and software systems, from commercial, professional and amateur sources. A feature of the day will be demonstrations of the BMS Foray Database, which by then will contain more than 10,000 records. The meeting should be in the diary of anyone interested in the natural history, distribution and classification of fungi.

If anyone has a computerised system for identification, classification or mapping of fungi which they would be interested in demonstrating, please contact **Dr P F Cannon**, CAB International Mycological Institute, Ferry Lane, Kew, Surrey TW9 3AF, with full details of the system and requirements for space, hardware, etc.

FINAL NOTICE
BRITISH MYCOLOGICAL SOCIETY
FUNGI AND ECOLOGICAL DISTURBANCE
University of Sheffield: 21-23 September 1987

Accommodation, meals and scientific sessions will be held at Tapton Hall.

The booking form should be completed and returned as soon as possible, but arriving not later than 21 August 1987, to **Dr R C Cooke**, Botany Department, The University, Sheffield S10 2TN (Tel: 0742 768555 ext 4371) from whom further details may be obtained.

PROGRAMME
MONDAY, 21 SEPTEMBER 1987

11.00 Registration at Tapton Hall.
13.00 Lunch.

Session 1: DESTRUCTIVE DISTURBANCE-DIRECT AND INDIRECT EFFECTS OF ANIMALS
Chairman: A Lyon

14.00 Chairman's Introduction.
14.05 **Fungi and ecological disturbance — an overview** — G J F Pugh, Portsmouth Polytechnic.
14.35 **Role of a stable mycelial system in the maintenance of floristic diversity in grazed grassland** — D J Read & J P Grime, University of Sheffield.
15.05 **Ecological consequence of arthropod grazing on VA mycorrhizal fungi** — T P McConigle & A H Fitter, University of York.
15.35 Tea.
16.00 **Interactions of fungi and insects in fallen trees of an old-growth conifer forest** — S E Carpenter, Oregon State University, Corvallis, USA.
16.30 **The coprophilous fungus succession — a model system** — J Webster, University of Exeter.
17.00 **Copromes — another model system** — R C Cooke, S N Wood & H O Safar, University of Sheffield.
18.30 Dinner (bar at 17.30 and from 20.00).
20.00 Poster Session.

TUESDAY, 22 SEPTEMBER 1987

Session 2: DESTRUCTIVE DISTURBANCE — NATURAL DISASTERS AND THOSE CAUSED BY MAN
Chairman: R C Cooke

09.00 **Larger fungi and some of earth's catastrophies** — R Watling, Royal Botanic Garden, Edinburgh.
09.35 **Fungal succession following the eruptions of Mount St Helens** — S Carpenter, Oregon State University, Corvallis, USA.

10.10 **Fungi in Surtsey soil** — E Henriksson & L E Henriksson, University of Uppsala, Sweden.
10.45 Coffee.
11.15 **Redevelopment of biological activity in stripmine spoils: saprophytic fungi** — S Visser, Kananaskis Centre for Environmental Research, Calgary, Canada.
11.25 **Redevelopment of biological activity in stripmine spoils: symbiotic fungal assemblages of grass roots** — J Zak, Texas Tech University, USA.
11.50 **Re-establishment of mycorrhizas following severe disturbance: comparative patch dynamics of a shrub desert and a subalpine volcano** — M F Allen, Utah State University, USA.
13.00 Lunch.

Session 3: DESTRUCTIVE DISTURBANCE — FURTHER NATURAL AND MAN INDUCED DISASTERS

14.00 **Development of post-fire fungal communities** — D Wicklow, USDA Agricultural Research Service, Peoria, Illinois, USA.
14.35 **Effect of point source atmospheric pollutants on fungal communities** — M S Wainwright, University of Sheffield.
15.10 Chairman's summary and introduction to field trip.
15.15 Tea.
15.45 Field trip to a local mine spoil tip which is being recolonised by *Betula* scrub with strong mycorrhizal associations.
18.30 Dinner (bar at 17.30 and from 20.00).

WEDNESDAY, 23 SEPTEMBER 1987

Session 4: ENRICHMENT DISTURBANCE

09.00 **Microbial degradation of leaf litter in freshwater streams — effects of low pH** — A-C Chamier.
09.30 **Ecological disturbance in communities of tropical fungi** — J N Hedger, University College of Wales, Aberystwyth.
10.00 **Grain storage — the management of ecological change** — J Lacey, Rothamsted Experimental Station.
10.30 Coffee.
11.00 **Patterns of fungal colonisation of cereal straw in soil** — N Morgan, Cranfield Institute of Technology.
11.30 **Importance of fungi in the straw-decomposing soil microbial biomass** — K Killham & M F Allison, University of Aberdeen.
12.00 **A comparison of fungal communities in straw decomposing in different soil types and under different cultivation practices** — R M Bowen & S H T Harper, Rothamsted Experimental Station.
12.30 **Decomposition of straw in thatched roofs** — J Kirby & A D M Rayner, University of Bath.
13.00 Lunch and end of Meeting.

BRITISH MYCOLOGICAL SOCIETY
Truffle Hunting in Italy
9-17 October 1987

This is an up-date of the programme already announced for this meeting in the last issue of *The Mycologist*. It is still possible to book for this meeting (the booking form was also in the last issue), but **hurry up!** Contact the Foray Secretary, **Dave Minter**.

9 October: participants gather in **Alba**, north Italy in afternoon. As with the foray to Catalonia, participants will be responsible for arranging their own transport to and from Italy. Get together in evening. Overnight in Alba.

10 October: morning with the Associazione Trifolau dell'Albese e Monferrato (Alba & Monferrato Truffle Association) on a truffle hunt which they are organising. Afternoon visiting Grinzane Cavour Castle, headquarters of the Confraternita del Tartufo e dei Vini di Alba (Alban Truffles & Wines Society) and a Truffle Museum. Overnight in Alba.

11 October: a visit to the Truffle Fair in Alba with celebration of folk traditions and demonstrations of gastronomic delights! We may be guests of Ditta Morra Tartufi srl (Morra Truffles plc) — to be confirmed. Late afternoon travel to Spoleto, Perugia, a mediaeval town famous for its festival. Overnight in Spoleto.

12 October: a tour of Ditta C Urbani (C Urbani Ltd), a truffle preserving factory also concerned with production of mycorrhizal plants for truffle production. We may be their guests at some point during the day — to be confirmed. Late afternoon, travel to L'Aquila, the home town of Dr Pacioni, our host.

13 October: a day hunting black truffles and other subterranean fungi, with an opportunity to examine collections. A tour of the city later on, then travel to Acqualanga.

14 October: a tour of the important Institute for Research on Mycorrhizal Plant Production and of a truffle-producing plantation. Travel to Borgo Val di Taro, where we will be guests of the Centre for Studies on the Mediterranean Flora.

15 & 16 October: two days hunting truffles and other subterranean fungi, with an opportunity to examine collections and to meet Italian mycologists. Overnights in Borgo.

17 October: disperse after breakfast.

Information on accommodation and transport within Italy remains limited at the time of going to press. Accommodation in Borgo will probably be free, and meals there will be at a subsidised price. Those who have completed and submitted a booking form will be receiving up-dates as this information becomes available.

BRITISH MYCOLOGICAL SOCIETY
Workshop on Sand Dune Fungi
Aberystwyth, Dyfed
25-28 September 1987

Sand dunes have not received the attention from field mycologists that they deserve. The workshop aims to introduce Members to this unexpectedly rich mycoflora, and the West Wales coast, near Aberystwyth, is an ideal situation, with major dune systems in splendid scenery within easy reach of the town.

Accommodation has been arranged in the **Swn-y-Don Hotel** in **Aberystwyth**, but lists of other hotels and types of accommodation, including camping, caravans, and bed and breakfast, will be sent on request. Laboratory facilities will be available in the **Botany and Microbiology Department, University College of Wales**, including the use of microscopes, and a video display system for the examination of preparations. A computer for foray list production and use of identification packages will also be available for those wishing to take advantage of the opportunity for 'hands on' experience.

The weekend will start on Friday evening, 25 September, at the Swn-y-Don Hotel, after dinner at 20.30, with a talk by **Maurice Rotheroe** on the fungi likely to be encountered, illustrated by colour slides (see *The Mycologist*, pp15-17). An excursion will be made by coach on the morning of Saturday, 26th, to the **Harlech** dunes. The scenic route will take about an hour, and the foraying should be very good. Return to Aberystwyth by 16.00 will give time for examination of the collected material before returning to the hotel. **Peter Orton** has kindly agreed to give us a talk on the taxonomy of sand dune agarics after dinner. On Sunday morning the nearby **Ynyslas** dune system in the Dyfi Estuary will be the foray site, with an opportunity to visit the Nature Conservancy Information Centre. Maurice Rotheroe has recorded over 120 species of agarics for Ynyslas. The laboratory will be open again in the afternoon for examination of specimens and discussion. After dinner, **John Savidge** has agreed to distil a 20 year study of Ynyslas into a short talk on the history of the dune system and its plant communities in relation to the ecology of the higher fungi.

For those who need to leave really early by train on the Monday morning, a 05.00 special to Birmingham and London exists, but other trains do depart at more leisurely hours later in the morning.

BRITISH MYCOLOGICAL SOCIETY

Workshop on Sand Dune Fungi

Aberystwyth, Dyfed

25-28 September 1987

BOOKING FORM

Name & Title .....F/M*
(Block capitals)

Address .....
(Block capitals)

.....

Tel: (inc STD code) .....

I/We* wish to attend the Workshop .....

I/We* will arrive before/after* breakfast/dinner* on .....

Accommodation at the Swn-y-Don Hotel will cost £13.80 for Bed, Breakfast and Evening Meal. Packed lunches can be supplied at a cost of £1.50. Seven single rooms are available, the rest are either twin bedded or double bedded.

I require a single room .....
(tick as required)

I am willing to share a twin or triple bedded room .....

We require a double bedded room .....

Please book bed and breakfast and evening meal at the Swn-y-Don Hotel for 25 ( ), 26 ( ), 27 ( ) September *(tick as required)*

I am not staying at the Swn-y-Don but would like an evening meal on 25 ( ), 26 ( ), 27 ( ) September

I require vegetarian food .....

Please send me details of train and bus times to and from Aberystwyth

.....

I shall arrive at Aberystwyth by train/bus/car at

I will leave Aberystwyth by train/bus/car at

(delete as applicable)*

Please return this form **AS SOON AS POSSIBLE** with a deposit of £10.00 per person (cheques made payable to **BRITISH MYCOLOGICAL SOCIETY**) to **JOHN HEDGER**. Department of Botany & Microbiology, University College of Wales, Aberystwyth, Dyfed SY23 3DA before **1 September 1987**. Further details of the workshop will be sent to participants shortly after receipt of the deposit.

BRITISH MYCOLOGICAL SOCIETY
Laboulbeniomycetes Workshop
CMI, Kew
6-8 November 1987

The ascomycete order Laboulbeniales contains perhaps two thousand species of fungi worldwide — a substantial proportion of all ascomycetes. Many members of this order are known from north-temperate Europe — over eighty species, for example, in Finland alone. Only forty-six species have been recorded from the British Isles, and it is a reasonable assumption that many more must be present. There are, however, no records on the Society's Foray Records Database, no records from recent Society forays, and virtually no records at all from the British Isles in recent years, the last published contribution apparently being made in about 1960. Furthermore, it seems there are few if any field mycologists currently in this country with the ability or interest to find and identify these fungi.

The Society is concerned to ensure all groups of fungi receive adequate attention in recording. After all if we don't know what fungi are present, how can we conserve them? As a result, the first aim of this workshop will be to stimulate the interest of our field mycologists in these visually attractive fungi so that records start to appear on the database, and collections are deposited in herbaria. Because so little is known about the British species, they should present an ideal challenge to our amateur and professional naturalists who could make a significant contribution relatively easily.

The workshop should also, however, attract the attention of taxonomists and experimental mycologists, since the Laboulbeniales present many remarkable features which make them unique among the fungi. These fantastic organisms are parasites of insects, and seem to be on the borderline of what constitutes an ascomycete. Almost all other ascomycetes, for example, have indeterminate and very plastic development of the thallus and fruitbodies, making their comparative anatomy very problematic as a taxonomic tool. Members of the Laboulbeniales, however, have such closely controlled development of these structures that their taxonomy is almost entirely based on comparative anatomy.

The Society also hopes that this event will attract the attention of the limited number of mycologists internationally who work with these fungi, as there cannot be many opportunities for such workshops. We have been fortunate that **Dr Larry Hulden**, from Helsinki has agreed to lead the workshop, as he is one of the very few experts on north-temperate Laboulbeniomycetes, and has recently published several excellent accounts of the Finnish species.

The workshop will be similar in style to the Ascomycete Workshop held at the CMI in 1986. This means that participants will be responsible for organising their own accommodation in London. A list of accommodation available locally will be sent on request, and in cases of difficulty, some assistance with organising accommodation may be given. Numbers will be limited so that each participant can receive full assistance in their studies, and we hope that lively discussions will be generated in the pleasant social atmosphere usually present at these meetings.

BRITISH MYCOLOGICAL SOCIETY

Laboulbeniomycetes Workshop
CMI, Kew

6 — 8 November 1987

BOOKING FORM

Name(s) &
Title(s) . . . . . M/F
(Block capitals)

Address . . . . . .
(Block capitals)

. . . . . .

. . . . . .

Tel: (inc. STD code) . . . . . .

I/we wish to attend the workshop

Please send information about
accommodation in and around Kew

(Tick if required)

I enclose a deposit of £10 per person.

Please return this form as soon as possible, with your deposit of £10 per person (cheques made payable to BRITISH MYCOLOGICAL SOCIETY) to **Dave Minter,** Laboulbeniomycete Workshop, CAB International Mycological Institute, Ferry Lane, Kew, Surrey, TW9 3AF, to arrive no later than **19 October 1987.**

AWARDS FOR YOUNG MEMBERS TO ATTEND SOCIETY MEETINGS AND FORAYS

Council has set aside a sum of money to assist young members with the costs of accommodation and subsistence at Society meetings and forays.

The awards will normally only be made when other support for this purpose cannot be obtained (but receipt of other help with the cost of **travel** will not debar candidates from receipt of a British Mycological Society award).

The maximum amount allowed for any one award will be £50; and no member may receive more than **one award in any calendar year.** Candidates should normally be **under age 25.**

Applications, using the form included in **The Mycologist,** must be submitted to the Programme Secretary **at least two clear months before** the meeting to which they apply.

The awards will normally take the form of a voucher giving a **discount** on the accommodation and other charges set out on any booking form included in the programme section of **The Mycologist,** which can then be attached to the booking form in payment or partial payment for accommodation booked. Where the Society is not arranging accommodation, but leaving this to individuals, the Award will be paid by cheque, in arrears, when a photocopy of receipts for accommodation and meals **countersigned** by the local BMS organiser is sent to the Programme Secretary.

ALL APPLICANTS must include a note explaining their interest in the event and justifying their attendance for the dates indicated.

POSTGRADUATE STUDENTS MUST, in addition, attach a note of support from their supervisor or Head of Department which indicates their status as a student (degree for which registered, year of study) and shows what other sources of support have been applied for and the outcome of those applications.

BMS SYMPOSIUM VOLUMES

FORTHCOMING PUBLICATIONS

British Mycological Society Symposium 12.
EVOLUTIONARY BIOLOGY OF THE FUNGI
Edited by A D M Rayner, C M Brasier & D Moore

The fungi represent superb tools for the study of evolution 'in action'. This book is the first to bring together in one volume coverage of the rapidly growing consensus of knowledge and ideas concerning 'evolutionary biology' of the fungi in the widest sense. It draws not only upon the impetus given to the field by modern molecular approaches but on the wider technical and philosophical issues raised in the search for evolutionary pattern in fungal life styles, fungal populations, and at the phylogenetic level. This exciting and too long neglected field is one which should interest not only mycologists and evolutionary biologists but also interest those involved in the control, manipulation and commercial exploitation of fungi. 350pp.

Readership: research workers in mycology and evolutionary biology.

Price: about £30.00

British Mycological Society Symposium 13
FUNGAL INFECTION OF PLANTS
Edited by G F Pegg & P G Ayres

Fungal infections have a major effect on the growth of plants. Pathogenic fungi stunt and kill their hosts whilst mycorrhizal fungi are highly beneficial to the plants they infect. The aim of this volume is to treat fungal infection as a theme common to pathogenic and mycorrhizal fungi alike, thus providing up to date information in a form that stimulates comparison and encourages further experimental work. It deals with the establishment, progress and outcome of infection, covering such important fundamental aspects as recognition, resistance and the potential of molecular biology for a better understanding of these phenomena. 320pp.

Readership: advanced undergraduates, research workers in mycology and plant pathology.

Price: about £32.50

Please copy this form for your own reference

BRITISH MYCOLOGICAL SOCIETY

FUNGI AND ECOLOGICAL DISTURBANCE

University of Sheffield 21-23 September, 1987

BOOKING FORM

Name &
Title . . . . . M/F*
(Block Capitals)
Are you a BMS member? . . . . . yes/no*

Address . . . . . .
(Block Capitals)
. . . . . .

. . . . . .

Tel. (inc. STD code) . . . . . .

Please reserve the following accommodation and meals (insert number required).

	Sun. 20th	Mon. 21st	Tue. 22nd	Wed. 23rd	£ p
Early morning Tea & Biscuits £0.60	X				
Bed and Breakfast £11.25					
Coffee £0.50	X				
Lunch £3.95	X				
Tea £0.50	X				
Dinner £5.00	X			X	
				TOTAL	

Tick box if you would like to attend short field trip (no charge). ☐

* *Delete where not applicable.*

If you would like to present a poster please give title and indicate space required (m)

. . . . . .

. . . . . .

Accommodation is in single rooms with washbasins.

Please return this form together with your cheque (made payable to **British Mycological Society — Ecological Disturbance Account**) to **Dr. R. C. Cooke,** Botany Dept., The University, Sheffield, S10 2TN. To arrive no later than 21 August 1987. No refunds given.

Please copy this form for your own reference

BRITISH MYCOLOGICAL SOCIETY

AWARDS FOR YOUNG MEMBERS TO ATTEND SOCIETY MEETINGS AND FORAYS

APPLICATION FORM

The awards take the form of a voucher giving a discount on the accommodation and other charges set out on any booking-form for a meeting or foray of the British Mycological Society. Travel expenses will not be met.

Complete this application form and send it, together with the required supporting documents, to the Programme Secretary, Dr David Moore, Dept. Cell & Structural Botany, Williamson Bldg., The University, Manchester M13 9PL. Applications must be received at least **two clear months before the meeting to which they refer.**

Name .....

Date of Birth .....

Address .....

.....

.....

Tel: (inc. STD code) .....

Are you a Full Member, Student Member, Associate?

Details of Society event for which assistance is sought:

Title .....

Dates .....

Signature .....

Date of application .....

ALL APPLICANTS must include a note explaining their interest in the event and justifying their attendance for the dates indicated.

POSTGRADUATE STUDENTS must, in addition, attach a note of support from their supervisor or Head of Department which indicates their status as a student (degree for which registered, year of study) and shows what other sources of support have been applied for and the outcome of those applications.

NEWS AND INFORMATION

The Mycologist wishes to provide an international news service for mycology. Members and readers are therefore requested to submit any news items to the **Senior Editor** for early inclusion in a future issue. This form is designed to help you. Contributions are welcome at any time. The Editors believe this to be an important service but we depend on you to supply the information.

Meetings, congresses, forays (with address for further information) .....

.....

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Visitors to institutions .....

New mycological research projects; individuals and institutions

.....

.....

.....

Promotions, retirements, honours .....

New publications .....

Courses in mycology .....

Travel and expeditions .....

Other .....

Name of sender .....

Address .....

.....

.....

Please copy this form for your reference

BRITISH MYCOLOGICAL SOCIETY

and

LINNEAN SOCIETY OF LONDON

NOVEL APPROACHES TO THE SYSTEMATICS & IDENTIFICATION OF FUNGI

13th November 1987

Name(s) &
Title(s) . . . . . .

Address . . . . . .

. . . . . .

Tel. (inc. STD code) . . . . . .

I would like to attend this meeting, and enclose a deposit of £1.00 per person, to cover the cost of tea and coffee during the day.

Please return this form as soon as possible to **Dr. P. F. Cannon,** CAB International Mycological Institute, Ferry Lane, Kew, Surrey TW9 3AF, UK (Tel. 01-940 4086)

Please copy this form for your own reference

BRITISH MYCOLOGICAL SOCIETY

Recognosce notum, ignotum inspice

MEMBERSHIP APPLICATION FORM

Name & Title ..... M/F*

Honours/Degrees/
Institution Registrations .....

Address .....
(Block capitals)
.....

.....

Telephone no (inc. STD code) .....

I wish to become a Full Member/Student Member/Associate* of the British Mycological Society, and if elected agree to abide by its rules

Signature ..... Date .....

Please indicate in order of preference the area(s) of mycology in which your interests mainly lie:

- ☐ Biotechnology
- ☐ Ecology
- ☐ Foray, Systematics and Structure
- ☐ Genetics, Molecular Biology & Evolution
- ☐ Pathogenic & Mutualistic Interactions
- ☐ Physiology

MEMBERSHIP PROPOSAL

We, the undersigned, think that .....
is a suitable and desirable applicant and propose his/her* election as a Member/Student Member* of the Society.

Proposed by .....
(Member, from personal knowledge)

Name .....
(Block capitals please)
Seconded by .....

Name .....
(Block capitals please)

**Delete as appropriate*

The above form should be completed and returned, together with a cheque (£ sterling preferred) for the appropriate annual subscription, to the Membership Secretary, **Dr M O Moss**, Department of Microbiology, University of Surrey, Guildford, Surrey GU2 5XH. In the event of an applicant not being elected to membership, this subscription will be refunded in full.

NOTES: The current annual subscription rates are: Full Members £15, Student Members £8, Associates £5.

Applications for Student Membership **must** be accompanied by a note from the Supervisor certifying that the applicant is a registered postgraduate student.

If you do not know of any existing BMS Members who could complete the proposal form, please write directly to the Membership Secretary.

BRITISH MYCOLOGICAL SOCIETY

Autumn Foray & Modelling Workshop
Pershore, Worcestershire

3 — 10 September 1987

The 1987 Autumn Foray is unusual in that it will be held concurrently with a week-long workshop on making models of fungi. Both meetings will be based in Pershore, Worcestershire, at the College of Horticulture there. The college is situated just over one km from the centre of the town in extensive grounds with an arboretum and glass houses nearby, and is surrounded by fields. There is ample laboratory space at the college and it will be available for the whole period of the foray. Some microscopes will be provided, but those forayers who can bring their own are urged to do so.

Accommodation consists of single study bedrooms with a few at ground floor level. Arrangements for twin bedded rooms, similar to those on the Chester Autumn Foray, will apply. Caravans and tents are also welcome on site, and campers who book prior to the foray can join residents for evening meals. No pets please. A list of other accommodation in the town is available on request.

For the foray, a stimulating range of sites is being organised including a day trip to Wyre Forest and another to the Malvern Hills. Many of the sites are reserves belonging to the Worcestershire Nature Conservation Trust, a society which is providing considerable assistance in the organisation of this foray. A social programme is also being organised, including a foray dinner and a public lecture on mycology to be presented jointly with the Worcestershire Nature Conservation Trust.

The workshop will be led by **Dr Stephanos Diamandis** of the Northern Forest Research Station, Thessaloniki, Greece. Specimens collected on the foray will be its principal source of material, and participants will have the opportunity to examine different ways of making models, from techniques which permit artistic interpretation to those which are suitable for making scientific exhibits. It is hoped that this workshop will stimulate further the considerable current interest in modelling within the Society.

Please note that all bookings for accommodation for this workshop are handled through the same booking form as for the foray. This booking form appeared in the last issue of **The Mycologist.**

URBAN TAR-SPOT OF SYCAMORE

G J F PUGH
School of Biological Sciences, Portsmouth Polytechnic, Portsmouth PO1 2DY

During August and September 1986, Tar-Spot, caused by *Rhytisma acerinum* has been seen on the leaves of only one of five young sycamore (*Acer pseudoplatanus*) trees in a garden in Edgbaston, near the centre of Birmingham. There has been no obvious infection for the last eleven years. On several walks around Edgbaston including the campus of the University of Birmingham, a few other infections have been seen during October. Occasional trees had widespread but relatively light infestations while nearly all trees were not obviously affected.

The reason for this note is to enquire whether there have been other sightings of Tar-Spot in urban and other areas where the disease has been absent for years, as several questions are posed by the observation:

1 Is the disease returning as pollution levels fall?
2 Is the one affected tree particularly susceptible?
3 Has the fungus become more resistant to pollutants?
4 How far had the inoculum travelled? It may be that there has always been an unnoticed low level of Tar-Spot in the area, or the inoculum may have originated much further away.
5 Had the very wet summer of 1986 allowed *Rhytisma* to be able to spread by constantly 'scrubbing' the atmosphere?

The distribution of Tar-Spot has been affected by aerial pollution, and particularly by the presence of sulphur dioxide. It has been absent in urban and industrial areas, and in some localities for a considerable distance down-wind of large towns. Buckley (1971), when working on the phylloplane mycoflora of sycamore at Winkburn, Nottinghamshire, found no evidence of Tar-Spot in the woods there, and that the area was 'directly down-wind of the industrial areas of the east Midlands and it is therefore likely that the atmosphere of the site will be affected by industrial smokes'. To the west of Winkburn, sycamores growing in a relatively clean atmosphere were frequently infected.

The distribution patterns of lichens have been used to indicate levels of aerial pollution. Can we now use the recolonisation of areas by Tar-Spot and possibly of Black Spot of Roses (caused by *Diplocarpon rosae*) to monitor reductions in the levels of urban aerial pollution?

REFERENCE

BUCKLEY, N G (1971). Biological studies of fungi associated with *Acer pseudoplatanus* L.Ph.D. thesis, Univ. Nottingham.

PODIATRIC POLYPORE

When Perth (Western Australia) podiatrician Jenny Russell ran short of the dried flesh of *Piptoporus betulinus* which is imported from Britain, she sought a substitute from the Department of Botany at the University of Western Australia. An obvious choice was *Piptoporus portentosus*, so similar, and even used as tinder by Australian aborigines. Podiatricians use 'amadou' to pack behind ingrowing toenails. Jenny tried the local product on some of her patients. It was duly sterilised — she did not want to be accused of inoculating them with 'piptoporomycosis'! To date it has given excellent results.

R N Hilton

HYGROCYBE CONICOIDES (P D Orton) P D Orton & Watl.

In Notes Roy. Bot. Gard., Edinb. **29:** 131 (1969)

Hygrophorus conicoides P D Orton in Trans. Br. mycol. Soc. 43: 262 (1960).

Hygrophorus conicus (Scop.:Fr.) Fr. var. *conicoides* (P D Orton) Arn. in Persoonia 8: 103 (1974).

Habitat: In grass usually near sea, including sand-dunes. *Distribution:* North-west Europe.

Pileus 1.5-4cm diam, conical to conico-convex, finally acutely umbonate, surface scarlet red or cherry red, with a narrow, yellow marginal zone, slowly discolouring black from centre, with a silky sheen. *Lamellae* free to narrowly adnate, chrome yellow soon with a pinkish tint becoming orange-red to scarlet, finally carmine red, subcrowded. *Stipe* 2-7cm × 3-6mm, cylindric, hollow, surface lemon to chrome yellow, bruising black, silky fibrilloso-striate. *Veil* none. *Context* scarlet red, lemon yellow in stipe, blackening; clamp-connexions present. *Odour and taste* none. *Spore print* white. *Spores* 10-13 × 4-5µm, oblong-cylindric to subphaseoliform, hyaline, thin-walled. *Basidia* 36-42 × 9-10µm, tetrasporic. *Lamella-edge* sterile to heteromorphous. *Cheilocystidia* present as indefinite clavate elements. *Pleurocystidia* none. *Hymenophoral trama* regular. *Pileipellis* a repent epicutis of radially parallel hyphae.

Agaricales — Hygrophoraceae — *Hygrocybe* (Fr.)Kummer — Sect. Hygrocybe.

Other remarks: Differs from *H. conica* (Scop.:Fr.)Kummer and *H. nigrescens* (Quél.) Quél. by the reddening lamellae, red context in the pileus, and narrow spores.

REFERENCES

BSMF 86: 169 (1970); Doc. Mycol. Fasc. 9: 3 (1973); ORTON. TBMS 43: 252, key (1960).

A W Brand

Profiles of Fungi 6

HYGROCYBE FLAVESCENS (Kauffm.) Singer

in Lilloa **22:** 154 (1951)

Hygrophorus puniceus (Fr.)Fr. var. *flavescens* Kauffm. in Rep. Mich. Acad. Sci. 8: 34 (1906).

Hygrophorus flavescens (Kauffm.) A H Smith & Hesler in Lloydia 5: 60 (1942).

Habitat: On soil in mixed woods, fairly common. *Distribution:* N. temperate. (*photo:* Stockgrove Park, Beds, 14 Oct 1984, Outen).

Pileus 2-6cm diam, broadly convex to applanate or slightly depressed; surface chrome yellow to vermillion, glabrous, persistently viscid, shiny. *Lamellae* adnexed, pale to deep chrome yellow, often with orange tint, broad, subdistant. *Stipe* 4-7cm × 2-10mm, equal, often compressed, fragile and splitting, hollow; surface chrome yellow to orange, whitish at base, smooth, moist, not viscid. *Context* thin, yellowish; clamp-connexions present. *Odour* and *taste* indistinct. *Spore-print* white. *Spores* 6.5-9 × 6-10µm, ellipsoid, hyaline, thin-walled. *Basidia* 26-40 × 6-10µm, bi- or tetrasporic. *Cystidia* absent. *Hymenophoral trama* regular. *Pileipellis* a thin ixocutis of repent hyphae.

Agaricales — Hygrophoraceae — *Hygrocybe* (Fr.)Kummer — Sect. Hygrocybe.

Other remarks: Distinguished from *H. chlorophana* (Fr.)Wünsche by chrome yellow lamellae, drier stipe and narrow spores; *H. aurantiosplendens* Haller is more robust, with scarlet red tints, and constricted spores.

REFERENCES

FAVRE ZA 33; HESLER & SMITH (1963): 211; HOMOLA (1985) Bull. Maine Exp. Sta. 810, pl. 3/19; L166C; ORTON, TBMS 43: 255, key (1960).

A R Outen

PHOTOGRAPHING FUNGI — 2

GORDON DICKSON

The word 'photography' literally means 'drawing (or painting) with light' and this is enormously easier in field situations if one uses available light as it can be varied with shading or with reflectors to produce an effect which can actually be seen in the viewfinder. Whilst flash has its place, the shadows it will cast cannot be seen until the photograph is developed.

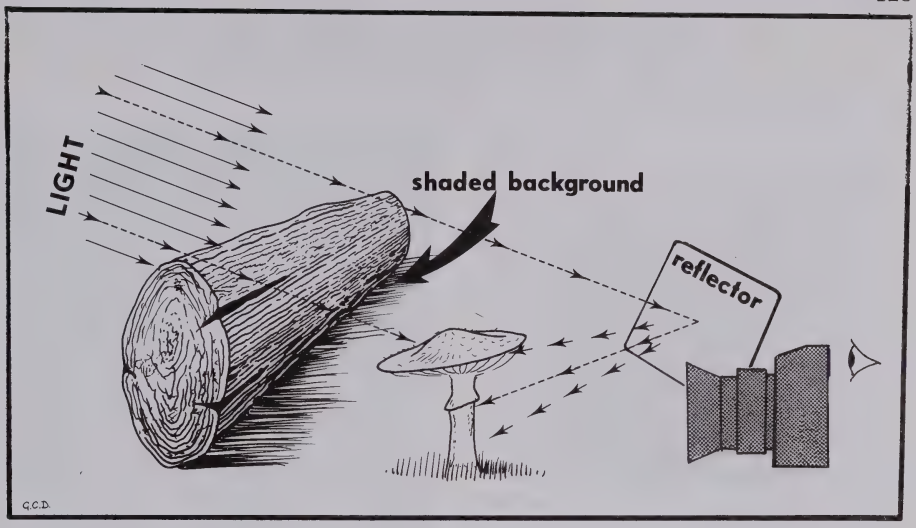
CAMERA SUPPORT

It follows that the first requirement is for a camera support of some kind, usually a tripod but a ground-spike or a bean-bag can be used: the problem with most tripods lies in getting the camera low enough. The only one I am aware of which will do this is the 'Benbo', which has all three legs pivoted on a bent bolt. This does all that one would wish for but is extremely heavy and cumbersome to carry around all day: a lighter version would be ideal but so far is unavailable. The ground-spike with a ball-joint on top is perhaps the next best thing (and can always be used in self-defence!) but I usually find that either the ground is too hard to penetrate or too soft to hold the camera steady, so I still carry (and complain about) my 'Benbo'.

LIGHTING

Without any doubt whatever the most difficult light in which to photograph fungi (and most other things) is bright sunlight. All films, colour films especially, have a limited latitude — that is a limited range of brightness to which they can respond. It follows that whilst the eye can see perfectly well detail in shadow, and detail in highlights, the photographer is in an 'either/or' situation: he can *either* have detail in the shadows *or* detail in the highlights but *not both* together. Fortunately in Britain there are more dull days than bright and in the sunnier countries fungi tend to grow in the shade. The actual intensity of the light does not matter very much if the camera is on a tripod as the duration of the exposure can be increased. The *ideal* lighting is a lightly overcast day with the sky lighter on one side than the other — and it is surprising how often this does actually occur. Even in woodland, a dull day is better than a bright one as patches of bright sun can completely ruin a picture.

The most interesting effects and the most texture-revealing pictures are taken *against* the brightest light especially if a dark, shadowy background can be devised. This produces a rim-lighting effect which throws into relief any texture present on the cap surface, especially scales. It does have the effect, of course, of throwing the underside of the cap and the nearside of the stem into shade. This shaded area must be 'filled-in' either with a small flash held well back behind the camera or, better, by a reflector, an item which is an absolute 'must' for all outdoor photographers (the BBC Natural History Unit uses large ones to fill in the shadows on Sir David Attenborough's face when filming in tropical conditions). In very bright conditions a slightly matt reflector is best whilst in dull conditions a really shiny one is better. Kitchen foil is very useful as it is usually matt on one side and bright on the other and can be easily glued onto a piece of card. Other useful reflectors can be made from the covers on Chinese take-away meals or aluminium sheet which



can be obtained with an irregularly patterned surface used for decorative purposes. Really large areas can be filled in using the aluminium coated polythene sold as 'survival blankets', and, who knows, you might be glad of it on a cold winter's night! I make no apology for repeating that the reflector has a huge advantage in that, with the camera mounted on a tripod, it can be manoeuvred with one hand whilst the effect is observed in the viewfinder. The general idea is illustrated in the text-figure.

The next issue of **The Mycologist** will appear in October 1987.

The contents will include:

FROM CHINESE MEDICINE TO MYCOINSECTICIDES: MAN'S EXPLOITATION OF ENTOMOGENOUS FUNGI

FUNGAL PATHOGENS OF SPIDERS

THE UNNATURAL HISTORY OF THE FLY AGARIC

together with details of:
Novel Approaches to Systematics & Identification of Fungi Symposium
and *Mycology, Maps & Microchips*, Autumn Taxonomy Meeting.

Continued from page 109

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MAXWELL, G (1960). *Ring of Bright Water* pp 39-40. London: Pan Books Ltd.

BRITISH MYCOLOGISTS: 1. M J BERKELEY (1803-89)

G C AINSWORTH
55 Park Grove, Derby DE3 1HG

It is appropriate that a series of notices of British mycologists should begin with the **Reverend Miles Joseph Berkeley** MA FRS, the founding father of British mycology whose name is still in international currency. His life was both conventional and uneventful and can be quickly summarised. Born 1 April 1803 at Biggin Hall, Northamptonshire, he was educated at Oundle and Rugby and graduated from Christ's College, Cambridge, in 1825. The next year he was ordained an Anglican priest and took up a curacy at Margate becoming, in 1833, Perpetual Curate of Apethorpe and Woodnewton, Northamptonshire (when he lived in the neighbouring village of King's Cliffe), and finally (1868) Vicar of Sibbertoft, near Market Harborough where he died 30 July 1889.

Interested in natural history as a boy, Berkeley was, like Darwin, while at Cambridge influenced by the Rev Prof J S Henslow, geologist and professor of botany. His first publications were on zoological topics but the opportunity to study marine algae at Margate and contacts with **W H Harvey** of Dublin and **Robert K Greville** of Edinburgh resulted in his *Gleanings of British Algae* (1833) and the decision to specialise on cryptogams, particularly fungi. Correspondence with **William J Hooker**, then professor of botany at Glasgow, led Hooker to ask Berkeley to prepare the section on agarics for the mycological volume of *The English Flora* by **J E Smith**. Berkeley's contribution was so satisfactory that Hooker induced him to cover the whole group and a 433-page volume, *Fungi*, appeared in 1836 (*The English Flora* 5 = Hooker's *British Flora* 2(2). This work, supplemented by four fascicles of exsiccati comprising a total of 350 specimens distributed by Berkeley during 1836-43, was the most comprehensive national census of fungi hitherto produced and included much original observation. Berkeley continued to make contributions to the British fungus flora for the next fifty years, especially by a series of 2050 *'Notices of British Fungi'*, most in collaboration with **C E Broome** of Bath, which appeared in 35 instalments between 1837 and 1885 (Index, *TBMS* **17:** 308-30, 1936).

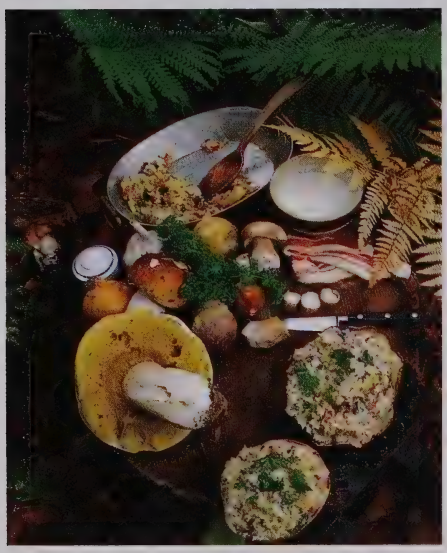
Berkeley also published on exotic fungi, including those collected by Darwin on the voyage of the *Beagle* (eg *Cyttaria darwinii* Berk.), and a long series on North American fungi in collaboration with **M A Curtis** (see R H Petersen, *Biblioth. Mycol.* **72**, 1980). After W J Hooker became Director of the Royal Botanic Gardens, Kew, in 1841, fungi received at Kew for identification, including collections by **J D Hooker** in the Himalayas (1847-50), were passed on to Berkeley who published many of his determinations in *'Decades of Fungi'* 1-62 (1844-56) (Asher Reprint, 1969). Berkeley was most industrious. He was the author or joint author of more than 600 publications, described some 6000 new species, and amassed a herbarium of 10000 specimens which in 1879 he gave to Kew.

But Berkeley was more than an able taxonomist. He independently elucidated the structure of the basidium (1838), recognised that potato blight was of fungal origin (1846), wrote a 600-page book, *Introduction to Cryptogamic Botany* (1857) which became a standard text, and published a notable series of 173 articles on *'Vegetable Pathology'* in the *Gardeners' Chronicle* during 1854 to 1857.

To meet the financial pressures of a large family (there were 15 children, 13 of whom survived to adolescence) he and his wife for a time ran a school for boys at King's Cliffe and Berkeley earned extra money where he could. He was a regular contributor to the *Gardeners' Chronicle*, edited the Royal Horticultural Society's Journal (1866-77), acted as examiner for London University and other bodies, and contributed to such publications as *The Vegetable Kingdom* by Lindley, Lindley & Moore's *Treasury of Botany*, and the second edition of *A Cyclopedia of Agriculture* by J C Morton. He was granted a Civil List Pension of £100 in 1867 for his services to botany and diseases of plants in particular and remained active to the end although troubled by gout.

GASTRONOMY

ROGER PHILLIPS



By the beginning of the eighteenth century, France was renowned for its superb cuisine as exemplified in the feasts at Louis XIV's dazzling court. The chief perpetrator of this reputation was Francois Pierre de la Varenne, brilliant chef who supposedly learned to cook in the kitchen of Henry IV, Louis's grandfather. In 1651, he published *Le Cuisinier Francais*, which revealed, for the first time, the changes that had been taking place in many noble French kitchens and laid the foundations to French cookery that have been with us ever since. One of the recipes he is best remembered for today is **Champignons Farcis**. Here is a modern version of this rich and superb dish, using *Ceps*.

STUFFED CEPS *(Boletus edulis)*

Serves Four
4 large fresh ceps (over 15cm)
1 tablespoon butter
1 large clove garlic, crushed
3 tablespoons chopped onion
½ lb (225g) bacon, chopped
1½ cups fresh white bread crumbs
3 tablespoons chopped parsley
¼ cup double cream

First, prepare each cep by wiping it with a damp cloth. Remove the spongy section (tubes) carefully with a spoon and discard. Cut out the stalk, chop it finely, and put it to one side. Melt the butter in a skillet, add the garlic, onion, bacon, and chopped mushroom stalks, and cook gently, stirring occasionally, until they are well softened but not brown (about 5 minutes). Add the bread crumbs and parsley, and stir thoroughly for 1 minute. Remove from the heat, and allow to cool slightly before stirring in the cream. Pile the mixture into the ceps, place them in a greased shallow pan, and bake them in a 225°C (425°F) oven for about 25 minutes.

WARNING: If you are interested in eating wild mushrooms and toadstools, make sure they are safe. Every year people die from eating poisonous species. Find an expert, or leave them alone.

Adapted from *Wild Food* (USA Edit), by Roger Phillips, published by Little Brown Boston, 1986.

REPORT OF THE TREASURER AT THE AGM ON 13 DECEMBER 1986

H O W EGGINS

I report that 1985 has been another year in which the audited Accounts of the Society show another surplus, this being some £22,000. Thus the finanical situation of the Society remains healthy, for which we need to again be grateful to the prudence and skill of past Officers and Councils of the Society, and especially to my predecessor as Treasurer. Examining the 1985 Accounts and comparing them with our previous Estimates, our **Excess of Income over Expenditure** of some £22,500 is considerably above the £4,000 we had estimated as a surplus, although it is somewhat lower than the actual surplus of £28,500 recorded before you for 1984. A number of factors conspired to produce this better than expected result, mainly concerned with **publications,** whose income was £18,000 above estimate, whilst expenditure was some £10,000 below estimates. The **Meetings** expenditure was £4,000 below estimate. Overall the inflation rate at 5% was 1% less than anticipated.

Expenditure which was significantly higher than estimated includes **Miscellaneous Publications,** nearly £6,000 above estimate due to reprinting of the *Russula* Key and our contribution of £3,300 to CABI for our share in production costs of the *Ascomycete Checklist*. Although above estimate, the expenditure is in line with 1984.

General Adminstration was £5,000 greater than in the previous year, and a similar amount above estimate, being some 6.1% of total turnover and including several exceptional items e.g. extra expenditure related to the Society's computers. As pressure on institutional expenditure continues, so it will be necessary for the Society to shoulder an increasing amount of the true costs of its administration. Nevertheless the Society still receives significant help in kind for which we are most grateful.

Interest on dividends somewhat improved over 1984. Note 7 on Page 7 (AGM Programme) shows the current valuation and movement in the Society's holdings in December 1985. This is the appropriate time to bring to this meeting's attention the review of **investments,** foreshadowed in my Report last year which was implemented at the beginning of 1986 and we are most fortunate to have had the advice of Dr Colin Booth.

As has occurred at each Annual General Meeting for many years, I should like the meeting to recall the names of our past contributors to the **Benefactors Fund:** *Miss Blackwell, Miss Brett, Mr Cheesman, Miss Lister, Mr Moore, Mr Pearson, Dr Pethybridge, Dr Ramsbottom, Mr Robinson, Wing Commander Schofield* and *Mr George Smith.*

The **Auditors** have no untoward comments and **Council** has recommended acceptance of the Accounts.

1986

This year our Investment Manager and Broker, **Mr Michael Low** of Messrs Campbell Neill, put into operation the policy agreed by the **Financial and General Purposes Committee,** namely that a very significant amount of the Society's reserves should be transferred to Government Stocks as the market allowed. Thus the situation this summer showed the Society holding £91,000 worth of Convertibles and UK Government Stocks, £25,000 in National Savings, £114,000 in Equities and Unit Trusts and £20,000 in Overseas Investments, making a split roughly **50% Equities** and **50 % Government Stocks. Income** has been increased from £8,000 to £15,000. We believe that Mr Low has done an excellent job for us.

The amount of money held on deposit has increased considerably. This is primarily because of the greater cash requirements of the Society when we can-

not rely on being able to realise investments exactly when we require them, and because we are able to get a higher interest on our investments due to operating a money market **Fixed Term Deposit Account** with our Bankers, the **Royal Bank of Scotland.**

This year has also seen the implementation of **Accounts Booklets for Meeting Organisers,** using the *Guidelines* issued by **Dr David Moore,** our Programme Secretary. I am most grateful for the cooperation.

1987

As foreshadowed last year Council has decided to transform the *Bulletin* into **The Mycologist.** This implies increasing expenditure threefold on this publication. Council had also approved significantly higher expenditure on the **Meetings Programme** of the Society. These significantly increased expenditures will be able to be met. Council has decided not to increase the Membership Subscription this year nor to increase the Trade Subscription of the *Transactions*. Council believes that these expenditures will be adequately met.

December 1986 *H O W Eggins*

REPORT OF THE PROGRAMME SECRETARY

D MOORE

1986 saw a slightly truncated programme of BMS scientific meetings. The **XIVth International Congress of Microbiology** ('Microbe 86') was held at the University of Manchester. Council, being mindful of the limited travel funds available at present, decided not to hold our usual September meeting but in partial recompense the Society organised three roundtable discussions at the Congress. This change apart, we have organised the usual variety of meetings; the General Meetings on **Fungal Evolution,** workshops on **polypores** and **ascomycetes,** and the autumn meeting on myxomycetes — and at venues from West Sussex, Bristol, Manchester, and Kew. Forays have been organised at Newton Stewart, Forest of Dean, Lincoln, and an upland foray in the Pennines. I felt that these events have been well attended and appreciated by our members and we should record our thanks to those who contributed to their organisation.

Major adjustments have been made, during the year, to the progress of programming so that we can meet the demands of **The Mycologist**'s press dates. By far the most important adjustment, for which we can thank Dr David Pegler, is that my statement today can be much abbreviated as written reports of the year's events will appear in due course in **The Mycologist.** I will end, Mr President, by recalling that **Peter Ayres** steps down as Secretary of the Pathogens and Mutualistic Interactions SIC. He has contributed outstandingly to the Society and Dr Lucas has a hard act to follow! Lastly, as programme Secretary I shall no longer be producing the **Meetings Newsletter** in its current form since its functions will be taken over by **The Mycologist.** I would, however, like to thank Keith Wilson and his staff of Herbert Jones, Nottingham for their prompt and reliable service in the printing of the **Newsletter** over a number of years.

December 1986 *D. Moore*

REPORT OF THE CHAIRMAN OF PUBLICATIONS

G HADLEY

The past year saw a continuation of the active work of the committee in relation to the consolidation of current policy and implementation of the remit from Council concerning several important issues, in particular the launch of **The Mycologist.** The feasibility of establishing the new journal was examined in depth through a Working Party, with input from many co-opted members of the Society, which led to the presentation of a comprehensive report and ultimately the approval of Council, in April 1986, to proceed with the project. Appointment of the Editor and Editorial Team, procuring estimates and planning for all the facets of a new publication went ahead smoothly, even though a little urgently at times. **The Mycologist** has appeared on target from January 1987 as quarterly issues each of 48 pages including up to 8pp of colour material and a central pullout incorporating the former Foray and Meetings Newsletters. By far the largest part of the burden of this development has been carried by the new Editor David Pegler. We owe a great debt of gratitude for this.

The **Bulletin** thus terminated as a title with the Autumn 1986 issue, after being published in a well established pattern for some 20 years. The Publications Committee wish to record their most sincere appreciation of the efforts of **Margaret Holden** and previous editors, who developed the strength from which it has been possible to take the next step in the evolution of our publications.

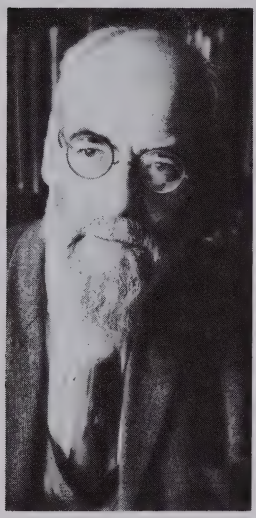
The **Transactions** has had another successful year although there has been a slight decrease in the amount of material submitted; 206 papers were published in 1986 (242 in 1985). The rejection rate remained at about 20%. The journal continues to provide a firm financial base and an income for the Society. Nevertheless, current trends including competition with new titles over recent years are matters which the Committee will be considering in detail during 1987. At the end of 1985 a Steering Group led by Treasurer and the Chairman of Publications established a liaison with representatives of our publishers to initiate action on the revision of the publishing contract in the light of the production of the new journal. This culminated in agreement on a broader contract, covering publication of both the **Transactions** and **The Mycologist,** commencing in 1987.

The other principal Society publication, the **Symposium Volume Series,** remains under the Series Editor with specific guidelines and a clear policy of producing more competitively priced, high quality books. Number 11 in the series, *Water, Fungi and Plants,* was recently published, while *Evolutionary Biology of the Fungi,* based on the Bristol Meeting of April 1986, and the volume on *Fungal Infection of Plants* are also in preparation, utilizing techniques of camera ready copy and disk storage of text.

The Society will continue with its policy of supporting publications originating from Members or other sources where there is a significant input to mycology in general. The biography of *M C Cooke,* by **Mary English,** will be published in 1987 and several other possible publications are under consideration for assistance.

December 1986 *G Hadley*

BMS NEWS



PROFILES OF HONORARY MEMBERS 1987

Dr R W G Dennis started his career as a plant pathologist but in 1944 joined the staff of the Kew Herbarium, from which he retired as Head of Mycology in 1975, although continuing as a Research Associate to the present day. His mycological contribution has been, and continues to be, prodigious, including publications on Ascomycetes, Agaricales, Gasteromycetes, Uredinales and Deuteromycetes, in addition to plant pathology and nomenclatural matters. He was co-author of *Common British Fungi*, and of the *New Check List of British agarics & boleti* published by the Society. His *British Ascomycetes*, running into three editions is a classic and the standard work, and the *Fungus Flora of Venezuela and adjacent countries* continues to be the only comprehensive mycoflora for any tropical region. In recent years he was elected Honorary Member of the Swiss Society of Mycology (1975), and Corresponding Member of the Mycological Society of America (1982). In 1986, his *Fungi of the Hebrides* was published.

Dr S J Hughes was elected Vice-President of the Society for 1987 and a profile appears on page 31 of the January number of *The Mycologist*.

Professor S Bartnicki-Garcia. A profile will appear in a later issue of *The Mycologist*.

Members wishing to propose candidates for Honorary Membership, are invited to do so in writing to the General Secretary.

SOCIETY'S CENTENARY

Ninety-one years ago a significant meeting in the history of the Society was held at 16 St Andrews Road, Huddersfield. It was the occasion of the 119th meeting of the *Yorkshire Naturalists' Union* and Charles Crossland, M C Cooke, Carleton Rea, George Massee, James Needham, Alfred Clarke and the Rev W W Fowler took the opportunity to discuss the burning question of the day — a national mycological society.

In 1867, Dr Bull (Curator, Hereford Museum) persuaded the *Woolhope Naturalists' Field Club* to make a special study of fungi and for many years thereafter an annual foray was held in the autumn. In 1871 the *Yorkshire Naturalists' Union* was formed and under its auspice annual forays were organised. Whereas the number of Woolhopeians taking an active interest in fungi diminished over the years in Yorkshire the study went from strength to strength. Over a cup of tea at St Andrews Road the stage was set for the foundation of what is now the **British Mycological Society**. The proposal was formally made at the YNU foray at Selby during a meeting at the Londesborough Arms, before many members of this new society went on to join the Lincolnshire Naturalists' at Grimsby. Thus the Society was conceived in the Midlands but firmly born and cradled in northern England.

In order to commemorate the centenary of the Society, Officers are planning several formal and informal activities ranging from forays in those original areas to symposia and publications reflecting the role of the Society in this modern age. Two immediate actions are necessary: (a) the setting up of a centenary fund, and (b) the collection of any archives or memorabilia which members might have depicting the Society's activities over the years. For many years a foray album has been

maintained and it is imperative to keep it up-to-date, as it is to bring together any photographs taken at other meetings of the Society for retention in a safe place.

Details of the proposed centenary fund will be published in *The Mycologist* and Council will soon be setting up a small working party to administer this and co-ordinate the activities. Further reading on the Society's early days may be found in: Blackwell, E M (*Naturalist* **1961**, 163-168); Ramsbottom, J (*TBMS* **30**, 1-16); Watling (*Naturalist* **107**, 121-128, 1982).

Roy Watling, President

PATHOGENS & MUTUALISTIC INTERACTIONS COMMITTEE

Following a change in the secretaryship after five years, it seemed appropriate for the retiring secretary to offer a few thoughts. In 1981, it was feared that the newly formed *British Society for Plant Pathology* would seriously weaken BMS activities and membership, but neither has happened, plant pathology continues to be well represented. Many active plant pathologists are members of both societies and, most importantly, friendly relations have developed with BSPP which have been manifest in several highly successful joint meetings. The future, however, may be more difficult if young scientists have to choose to join one or other society for financial reasons. Reduction in subscriptions for younger student and postgraduate members is, thus, very important if it can encourage young scientists, like their older brethren, to become involved in several societies. Each society offers unique opportunities, related societies should not be in competition. The Pathogens SIC may have been misnamed because it deals with *all* infectious fungi. I am pleased that our meetings have usually included coverage of mycorrhizal as well as pathogenic fungi. The fruits of such bringing-together of mycologists from different backgrounds are evident in last year's symposium volume, *Water, Fungi and Plants* and are illustrated even more clearly in the forthcoming symposium 'Plant Infecting Fungi'.

I regret that lichenised fungi have not been well represented in our past activities, this is an area that needs more attention. While fungi that infect animals have been represented in our meetings, and in September 1987 we are having a joint meeting with the Royal Entomological Society on *Insect-Fungus Relationships*, we have failed to form significant links with medical mycologists. This must surely be another target for the future; perhaps the Biotechnology SIC with its connexions in the pharmacological industry could provide the bridge. The Pathogens SIC, like the BMS, is in good health but will only stay that way if the members continue to give the same support that they have in the past. Let the new secretary, **John Lucas**, and his committee know what meetings you would like and how you wish activities to develop.

Peter Ayres

GENETICS, MOLECULAR BIOLOGY & EVOLUTION COMMITTEE

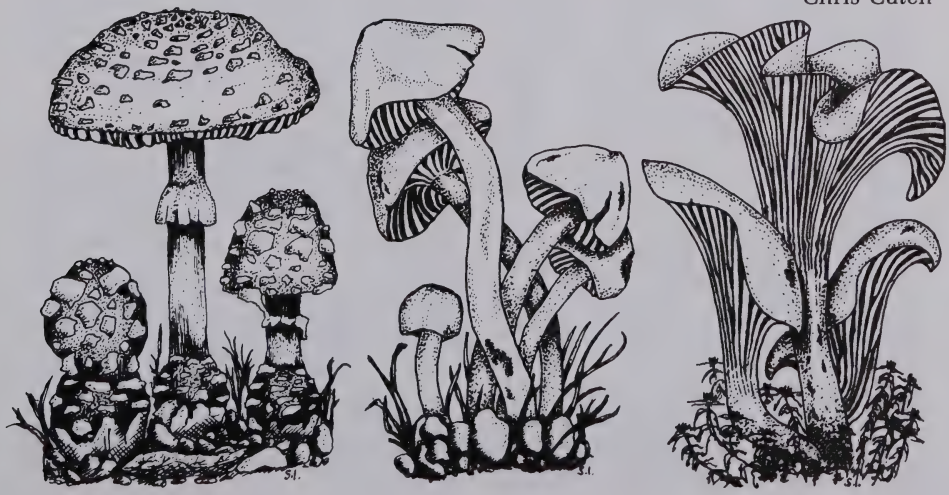
Activity in fungal genetics and molecular biology has grown rapidly over the last ten years, which is reflected by a blossoming of specialised meetings and publications. Much of this work has been done by geneticists and biochemists rather than mycologists and has been sponsored by genetical and biochemical societies. Keeping members of BMS informed of important developments, helping to transfer 'know-how' from the few model fungal systems to the many genetically-undeveloped fungal species and strengthening BMS activity in these fields are important functions of this Committee (GEMSIC). Communication through newsletters and meetings is an important part of scientific activity. Most of the species favoured by geneticists, which are frequently used as models of eukaryotic cells, have an informal communication network which helps rapid spread of the latest results, techniques and other information. Yeast geneticists are particularly well catered for in this respect. The new journal *Yeast* (J Wiley) contains much genetics and molecular biology and in addition there is a newsletter, also called 'Yeast', which

appears twice a year (Edit: H J Phaff, Univ California, Davis, California 95616, USA). As regards meetings, there is a major conference every year, wtih the *International Conference on Yeast Genetics and Molecular Biology* held in the even years (Finland in 1988), and a conference on *Yeast Molecular Biology* sponsored by the Genetics Society of America held in the odd years.

Last year saw an important development in communication for workers with the two genetically most popular filamentous fungi, *Neurospora crassa* and *Aspergillus nidulans*. For many years the two groups have produced separate newsletters and held largely independent meetings. However, the new molecular technology has emphasised a common interest and, following informal discussions, it was decided that a coming together would be mutually beneficial. As a first step the *Neurospora* and *Aspergillus* Newsletters have been amalgamated to form the **Fungal Genetics Newsletter**, starting in June 1986. As well as serving *Neurospora* and *Aspergillus* workers, it is hoped that this move will encourage contributions from individuals working on the genetics, molecular and cellular biology of other filamentous fungi, and encourage widespread communication within the fungal genetics community. The *Fungal Genetics Newsletter* is edited by Peter Russell (Biology Dept, Reed College, Portland, Oregon, USA) with additional information from Fungal Genetics Stock Center, Dept Microbiology, Univ Kansas Medical Center, Kansas City, Kansas 66103, USA). It is published once a year and a small charge is made to help cover the costs of production and mailing.

Related to this amalgamation of the newsletters, is a move by the organisers of the series of *Neurospora* Information Conferences to embrace other fungi and organise a meeting at which 'biological problems involving filamentous fungi in general are discussed'. The 1986 *Neurospora* Information Conference (No 18) was the first to be organised with this broader aim and included symposia on 'Molecular Biology of Filamentous Fungi' and 'Industrial Fungi' as well as sections devoted to *Neurospora*. A report of this conference may be found in *Fungal Genetics Newsletter* **33**, 6-21, June 1986. It is planned to hold these new-style *Neurospora* Information Conferences (renamed *Fungal Biology Conferences*) in alternate years starting in April 1987 at Asilomar, California. They should then alternate with the biennial *Gordon Conference on Fungal Metabolism*, which has in recent years contained much of interest to fungal geneticists, thereby ensuring that the North American community is well looked after. One function of GEMSIC will be to ensure that, through the co-ordinated activities of BMS and other relevant UK societies, a comparable forum for the exchange of ideas is provided for European fungal geneticists.

Chris Caten



MYCONEWS

OBITUARY: EDWARD A ELLIS 1909-1986

Ted Ellis, the well known naturalist, writer and broadcaster was born in 1909 in Guernsey but moved back with his parents to Norfolk in 1920. Self-trained he had no formal training in biology, his natural ability and early achievements were already widely appreciated when he was appointed Keeper of Natural History at the Norwich Castle Museum in 1928, a post he held until 1954. For forty years, until he died, Ted lived at Wheatfen Broad, Surlingham, an isolated cottage in the Yare Valley. With his own woods, fen and small broads Ted had a marvellous field laboratory at hand where he constantly made important observations and, particularly in mycology, discoveries new to science. Wheatfen rapidly became a Mecca for distinguished scientists, students and parties of school children, all of them fascinated by Ted's charm and apparently inexhaustible knowledge of all kinds of living things. The wider public in East Anglia and beyond quickly realised that Ted's weekly BBC 'Nature Postbag' and many other radio and television appearances were programmes never to be missed. His nature articles, daily in the local press for nearly 40 years and monthly in the *Guardian,* maintained an extraordinary high standard of interest and were beautifully written by a master of the English language. His *The Broads* is the standard work on Broadland natural history and is a coveted classic of the *New Naturalist Series.*

Ted's many distinctions included an honorary DSc from the University of East Anglia, President of the Norfolk Naturalist Trust and President of the Suffolk Trust for Conservation, and recently the recognition of a life-time's work for conservation by the award of the first Sidney Long Medal.

Now his many friends are making plans for a permanent Field Centre at Wheatfen which would both perpetuate his memory and give students of all ages the opportunity to follow his distinguished lead.

Association of Applied Biologists and the **British Society for Plant Pathology** are sponsoring a conference on 'Viruses with Fungal Vectors' on 25-27 August 1987 at St Andrews University, Scotland. For information write to: **Dr I J Cooper,** NERC Institute of Virology, Mansfield Road, Oxford OX1 3SR, England (virology) or, **Dr M Asher,** Brooms Barn Exp Station, Bury St Edmunds, Suffolk 1P28 6NP, England (mycology).

British Society for Plant Pathology plans to meet at the University Bristol from 16-18 December 1987. The theme is 'Epidemiological Basis for Disease Control'. For more information write to: **Dr R C Shattock,** School of Plant Biology, Univ College of North Wales, Bangor, Gwynedd LL57 2UW, Wales.

Sir John H Burnett, Principal and Vice-Chancellor of the University of Edinburgh and a former President of BMS, was awarded a Knighthood in the New Year's Honours List, 1987. Sir John retires on 30 September and will be succeeded by another former BMS President, **Professor Sir David Smith.**

Mr John C David joined the staff of CMI on 2 February 1987. He will be dealing with *Alternaria, Cladosporium* and similar fungi and their telemorphs.

Dr Howard Eggins (St. Peter's College, Aston), currently BMS Treasurer, was appointed to serve as a Member of the Food Advisory Committee from November 1986 for a period of three years.

Dr Michael H Ivory (Commonwealth Forestry Institute, Oxford) visited Colombia, Ecuador and Brazil (Sao Paulo and Belem) during February 1987, in order to continue his studies on the diseases of *Pinus,* as part of an ODA project.

OVERSEAS

American Phytopathological Society meets in Cincinnati, Ohio, in the Clarion Hotel from 2-6 August 1987. For information write to Amer Phytopath Soc, 3340 Pilot Knob Road, St Paul, MN 55121, USA.

Canadian Phytopathological Society met jointly with the **Mycological Society of America** for a 'Conference on Molecular Genetics in Fungi' at Carleton Univ, Ottawa, Ontario, Canada from 22-25 June 1987. For information write to **Mrs H Lecoste**, Executive Secretary, MSA/CPS '87, Conference Services, National Research Council Canada, Ottawa, Ontario, Canada K1A 0R6.

5th European Conference on Cortinarius will be held at St Hilari Sacalm, Girona, Catalonia, Spain from 1-7 November 1987. The location is densely forested and mountainous, and daily forays are planned in a wide range of habitats. For further details write to the organisers **Societat Catalana de Micologia**, Facultat de Farmacia, Department de Botanica, Avda Diagonal 643, 08028 Barcelona, Spain.

7th European and Mediterranean Cereal Rusts Conference will be held in Vienna, Austria from 5-9 September 1988. The organiser is **Dr Bruno Zwatz** , Federal Institute of Plant Protection, Trunnerstr 5, A-1020 Vienna, Austria.

Recognition in Microbe-Plant Symbiotic and Pathogenic Interactions will be held in the Netherlands from 21-26 May 1989 as a NATO Advanced Research Workshop (max 50 participants). For information write to **Ben Lugtenberg**, Leiden Univ, Dept of Plant Molecular Biology, Nonnensteeg 3, 2311 VJ Leiden, The Netherlands.

7th Simposia Nacional de Botanica Criptogamica will be held from 23-26 September 1987 at the Real Jardin Botanico, Madrid, Spain. It will include a Mycology Section. For further details write to the Secretaria, Real Jardin Botanico, Plaza de Murillo 2, 28014 Madrid, Spain.

Dr Roy Halling (New York Botanical Garden) visited Ecuador and Colombia in April and May this year, and plans to be in Venezuela during July and August, in connection with his taxonomic research on the neotropical species of *Collybia*.

Dr Kenneth B Raper (Madison, Wisconsin, USA) died on 15 January 1987, aged 78 years. Dr Raper will be best remembered as co-author of the major monographs on *Penicillium* and *Aspergillus*, but also made considerable contributions in the fields of myxomycetes and fungal genetics. Dr Raper was an Honorary Member of BMS.

Katia Rodrigues (Rio de Janeiro) has been awarded a fellowship by the New York Botanical Garden to investigate anamorph-teleomorph relationships in *Hypoxylon*.

Prof Alexander H Smith (Ann Arbor, Michigan, USA), the internationally recognised North American expert on Agaricales, died on 12 December 1986. He was author of 200 papers and books on agaric taxonomy and identification, and was a past President and Founder Member of the Mycological Society of America.

R Gordon Wasson (New York) died on 23 December 1986. He was an authority on ethnomycology, and author of several books including *Mushrooms, Russia and History* and *Soma: Divine Mushroom of Immortality*. Although an amateur and banker by profession, he was appointed a research associate of New York Botanical Garden.

AUTUMN TAXONOMY MEETING THE MYXOMYCETES

22 November 1986 — Royal Botanic Gardens, Kew

The Myxomycetes are a group occupying an uneasy position in the classification of living organisms, somewhere between plants and animals. Many believe they are most closely related to certain protozoa but because of the habitats where they are most often noticed, and the superficial resemblance of their fruitbodies to fungi, their study has been the preserve of mycologists. Within the Society it was felt that the Myxomycetes and the recording of them were somewhat neglected and this meeting was designed to stimulate interest in the group.

Over 100 people attended the meeting, held as in previous years at the Jodrell Lecture Theatre, thus proving there is plenty of interest in the group within the Society. Amongst the audience we were privileged to have **Mrs N E Nannenga Bremekamp** (The Netherlands), Europe's leading myxomycete taxonomist. The morning's activities, chaired by **Bruce Ing** (Chester College), began with the showing of the 1920's film 'Magic Myxies', which delighted the audience with its peculiar blend of excellent microphotography (incl. time-lapse studies remarkable for the day), jocular commentary, and musical accompaniment. **Michael Carlile** (Imperial College) then gave us an up-to-date introduction and placed the group in context with a comprehensive and well illustrated account of the nature, life-cycles and genetics of Myxomycetes. The next speaker, **Jan Rammeloo** (Nationale Plantentuin, Brussels) showed us that there is much more to 'Myxos' than meets the eye, with his detailed analyses of their wall structures, which are used as significant taxonomic characters. Dr Rammeloo's talk was supplemented by a series of posters displaying his beautiful and technically excellent SEMs. **Roland McHugh** (Dublin) also shed new light on the Myxomycetes, using vertical illumination and a novel photographic technique to show off the iridescent multi-coloured beauty of these organisms. The biological significance of the colours thus revealed is uncertain, but their appeal is undeniable.

Fortified by a delicious buffet lunch, served this year at the Jodrell Laboratory, members returned to the afternoon session. This had an ecological flavour and was chaired by **Michael Carlile. Alan Feest** (Univ Bristol) discussed the ecology of Myxomycetes in soil. His six years of study have revealed some startling facts. In some soils there can be as many as 10,000 plasmodium-forming units in one cm^3 of soil, and even in impoverished desert soils there may be several per gram. **Michael Madelin** (Univ Bristol) continued this theme with a discussion on the numbers of myxomycetes in the vicinity of crop plants. In test plots there seem to be many more myxos around cabbage roots than broad beans, though why this should be is not fully understood. **Bruce Ing** showed us that there are good correlations between the types of woodland and the myxomycetes present and, through his slides, gave us a tour through Britain's beautiful woodland as a bonus. Practical demonstrations on computer recording by **David Mitchell** and of herbarium specimens by **Peter Holland** added to the meeting.

The meeting was certainly a success and thanks are due to the speakers, chairmen and to the Minter family for organising the lunch. A followup 'Myxomycete Workshop' is planned for 1988 and we must keep the interest in the group alive.

DAY VISIT: CAB INTERNATIONAL MYCOLOGICAL INSTITUTE and the HERBARIUM, ROYAL BOTANIC GARDENS, KEW

21 February 1987

This was the first day-trip that the Society has organised and judging by its success it will be the first of many. Originally planned for 20 visitors, we ended up receiving 50 and, regrettably, many applicants had to be turned away. The numbers were such that the group was split into two and the programmes at CMI and RBG were repeated in the afternoon.

At **CMI**, visitors had the chance to hear about and see demonstrations in the three major divisions of activity: Taxonomic Services, Information Services and Culture Collection & Industrial Services. Informal talks, tours and poster demonstrations provided insight into the different roles played by the Institute and the services provided for mycologists throughout the world. Also, visitors had the chance to see a scanning electron microscope in action. Many members were interested to visit the Society's library, housed at CMI, and to watch the foray database computer in action (until the VAX computer decided to take the afternoon off!). This is the first time that Members have had a chance to see the computerised system in action although many had received the print-outs of records made at recent Society forays.

The visit to **RBG** included a video showing the scientific and research work of the Gardens. A detailed guided tour of the Herbarium was provided by Derek Reid. One of the major exhibits included a demonstration of all the stages that the mycologist goes through in preparing mycofloras and taxonomic monographs. This was accompanied by an imaginative, lavishly illustrated and well narrated tape-slide presentation by Brian Spooner describing David Pegler's expedition to the Lesser Antilles. There was also an exhibition of SEMs showing basidiospore morphology, various models and some spectacular and unfamiliar examples of tropical macrofungi selected from the Herbarium collections.

Between the two tours the visitors enjoyed a lavish buffet lunch prepared by willing helpers from CMI. Everyone enjoyed the day and many were surprised by the variety of the work at these two great mycological centres. Thanks to all those who made the visit a success, especially the Directors of CMI and RBG and all the staff who gave up their time to make the day so enjoyable. We have had many requests for a repeat performance: let's hope that in the future all those who were unable to be accommodated this time will get their chance.

Michele A J Williams

Yorkshire Naturalists' Union will be holding their annual Autumn Foray 1987 at Saltburn, near Redcar, from 18-21 September. For further details write to Mervin Nethercoat, 44 Thurston Road, Beverley, Yorkshire HU17 8LS.

DAY FORAY REPORTS FOR 1986

Foray Records: Records are now stored in the BMS database. New records should be sent to the Society's Recorder — **W T Moodie**, 141 Wood Lane, Handsworth Wood, Birmingham B20 2AQ. Printouts for individual forays can be received on request to the Foray Secretary (enclose s.a.e.). Foray reports should be sent to **P C Holland**, 9 Pinewood Court, 23 Clarence Avenue, Clapham, London SW4 8LB.

BMS FORAYS

BANGOR, NORTH WALES,
6 September 1986

During the morning a search of 15 acres of mixed woodland at the University College's botanic garden alongside the Menai Straits yielded 41 basidiomycetes and 10 ascomycetes. These included 6 *Russula* spp including *R. sardonia* and *R. lepida*, also *Cyathus striatus* by the side of a woodland path, *Chroogomphus rutilus, Gymnopilus dilepis* and *Macroscyphus macropus*. Participants lunched in the botanic garden laboratory and were able to examine the extensive collections which included banana, palms and many tropical species. Several large specimens of *Agaricus xanthodermoides* were collected from the soil in one of the cooler greenhouses. In the afternoon, a mixed woodland called Coed Mor, on the opposite shore of the Straits was visited, where 39 basidiomycetes and 13 ascomycetes were found. Particularly interesting were *Tricholoma fulvum, Lentinellus cochleatus* and *Boletus piperatus*, together with several pyrenomycetes enthusiastically identified by Tony Whalley.

Nigel Brown

COREHOUSE, LANARK,
11 October 1986

This was a joint meeting with the Glasgow Natural History Society and the Botanical Society of Edinburgh, held to explore the Scottish Wildlife Trust's Corehouse Reserve on the banks of the River Clyde. The reserve is mycologically much less well known than the Trust's highly productive Falls of Clyde Reserve across the river, but must surely have the same potential. Unfortunately 1986 was not the year to find out. In all 128 taxa were recorded, including 63 agarics, totals that in a normal year would easily have been exceeded. The dry, late season conditions did seem to suit one genus, *Clitocybe*, but the confusing array of superficially similar fruitbodies in every block of spruce was no great comfort. However, one of the four species collected was *C. tuba*, a notable addition to Clyde Valley records. A mass of tiny, brown, hairy cups on the beech stump defeated everyone, guesses ranging from a *Dasyscyphus* to a myxomycete, but they proved to the cyphelloid agaric, *Merismodes anomalus*. *Crepidotus wakefieldii* was the only other find of particular note. I am grateful to the SWT warden, Bruce Philip, for guiding us round the reserve.

Alan J Silverside

OTHER SOCIETIES

BIRMINGHAM NATURAL HISTORY SOCIETY

Forays during 1986 were again concentrated mainly on Warwickshire in an effort to add to the county list, but two forays were arranged outside the county, at Dudmaston, in Shropshire on 5 October, jointly with the South Staffordshire Naturalists' Society and at Ravenshaw Wood, near Lichfield, Staffordshire on 21 September. This, led by Mike Austin, who is attempting to organise a survey of the fungi in that county, was intended as a contribution to this survey. Other forays in Warwickshire were on 18 May at Ryton Wood, 24 August at Weethley Wood, 27 September at Hampton Wood, 19 October at Brandon Wood and Marsh, 26 October at Snitterfield Bushes and 2 November at Ryton Wood again. There were also two forays in connection with the weekend course on agarics under the auspices of the Extra-mural Dept, Birmingham University, tutored by Dr David Pegler, on 11 October at Mays Wood and on 12 October at Earlswood. In this disappointing season, due to the prolonged drought of late summer and early autumn, the foray at Weethley Wood on 24 August was the most productive in Warwickshire, as regards agarics, there were several *Inocybe* species including *I. bongardii, Laccaria tortilis, Rhodotus*

palmatus and many other species. This was, however, just before the drought began to have its impact. The foray at Ravenshaw Wood, Staffordshire, which contains some wetland sites also produced a good list of mainly familiar species. At Mays Wood on 11 October there was abundant *Nyctalis parasitica* and in Brandon Wood on 19 October, the similar species *N. asterophora*, both on decaying *Russula nigricans*. The latter has been recorded previously from only one site in the county, although *N. parasitica* has frequently been found. There have been three additions to the discomycete list, *Ascobolus roseopurpurascens* at Ryton Wood, *Miladina lecithina* at both Hampton Wood and Earlswood and *Phialina parachymatosa* at Snitterfield Bushes. A rust fungus, *Puccinia tanaceti*, on *Artemesia vulgaris* has been seen on two forays and also elsewhere, although it was not recorded during the survey of the Warwickshire fungi; is it just that it has been unusually prevalent in 1986 or was it previously overlooked — it is not very obvious due to the pustules being covered by the felted hairs on the underside of the leaves?

Malcolm Clark

HARROGATE AND WHARFEDALE NATURALISTS

About 25 people gathered on a cold morning at Plumpton Rocks, near Harrogate on 12 October. Later some retired to the laboratory at Leeds University. The most interesting finds were *Coriolus hirsutus* and *Agaricus augustus*, both rarely recorded in Yorkshire. There were good finds of *Lepiota procera*, *Lepista nuda* and *Meripilus giganteus*.

Tom Hering

HERTFORDSHIRE NATURAL HISTORY SOCIETY

As usual the Society held two forays, Alan Outen led one to Frithsden Beeches, Ashridge on Sunday 5 October. A large party, several of whom had never been on a foray before, collected enthusiastically and we managed to list 81 agarics and 40 other species although conditions were far from ideal because of the prolonged dry spell. Among the agarics were 12 *Russula* species and 7 species of *Lactarius*, the most interesting being *L. spinosulus* which had not previously been recorded there. *Amanita submembranacea* was another new record for the site. The second foray was on Saturday 18 October in the Hertford Heath area led by Margaret Holden. It was several years since we last had a foray there and we managed to get lost on the way to Goldings Wood and landed up in a new housing estate. When we did reach the wood it proved to be very disappointing with only 46 species recorded; the only noteworthy find was another specimen of *Amanita submembranacea*. After lunch on the Green, under the gaze of the boys and girls of Haileybury School on the way to spend their pocket money, we moved on to Balls Wood. Here the collecting was even poorer and only 27 species were listed. However, of these 14 had not been found in the morning, so the total for the day was 60 species.

Margaret Holden

ISLE OF WIGHT NATURAL HISTORY AND ARCHAEOLOGICAL SOCIETY

A good number of keen forayers met at Upper Hyde Farm, near Shanklin, to visit America Wood, by kind permission of the owner, Mr Stallard and the Woodland Trust, and the adjoining Apsecastle Wood, by permission of Mr Mew. Once again, we were fortunate to have the expertise of Dr Derek Reid and Mrs Audrey Thomas. Fungi were in short supply owing to the prolonged dry spells, but the grand total finally comprised 118 spp, 15 of them new to the Island list. Specimens of particular interest included *Russula ionochlora* (often confused with the common *R. cyanoxantha*), *Ceriporiopsis gilvescens* and *Mycoacia stenodon*. The specimens were on public display the next day, after which they were returned to the collecting area and scattered around.

Oliver H Frazer

LEICESTER LITERARY AND PHILOSOPHICAL SOCIETY

Tom Hering led an afternoon event in the somewhat grassy Nature Reserve of Martinshaw Wood on 4 October, which contains oaks, conifers and some beeches. It was rich in unidentified *Clitocybe* species and yielded one *Armillaria* still under study. Otherwise we remember many common species, with good yields of *Mutinus caninus* and *Tricholoma imbricatum*.

Tom Hering

NORFOLK & NORWICH NATURALISTS' SOCIETY

During 1986, several forays were held by the Society and new records were added to our Norfolk list. A single, very large specimen of *Amanita solitaria* from West Harling Woods on 14 September deserves a mention. Here also occurred *Chamaemyces fracidus*, *Phyllotopsis nidulans* and *Pholiota ochrochlora* among the 89 species recorded. How Hill pro-

vided *Pluteus leoninus* on a log, not seen in the county before or elsewhere for many years. A large patch of *Phanerochaete filamentosa* was seen under a fallen branch in Swanton Novers Wood. Our searches for *Cucurbitaria laburni* on dead *Laburnum* branches was successful this year in Blue Stone Wood. We could also cross off our wanted list *Panellus mitis*, which was in quantity in Emily's Wood, Felthorpe Wood and Roydon Common. Thompson Common provided a few specimens of *Entoloma sinuatum* and an excursion into the Cambridgeshire beech wood in May revealed 150-200 specimens of *Sarcosphaera eximia*. This has yet to be found by us in Norfolk, a colourful fungus we would be delighted to find here.

Reg & Lil Evans

NOTTINGHAM UNIVERSITY SCHOOL OF AGRICULTURE

About 25 students and friends gathered at Charnwood Lodge on 19 October. The Nature Reserve was not prolific, yielding mainly grassland and moorland species. An 'egg' turned out to be not *Mutinus* but a very small *Amanita phalloides* (a warning to phalloid-eaters here). Some of the small grassland species proved awkward, but *Baeospora myosura* and *Lepista sordida* were both finally identified. In the last few minutes two students picked unidentifiable gasteromycetes which turned out to be *Scleroderma bovista* and *Lycoperdon umbrinum* — both 'firsts' for Leics; on a site which has already produced *Scleroderma cepa*! Again about 25 people gathered at Calke Abbey, Derbyshire in wintry sunshine and a cold wind on 26 October. The site is a new property of the National Trust, with magnificent oak trees and a lake shore. The site was a bit barren but in soggy patches we found *Nolanea juncina* and *Naucoria scolecina*. Under the trees were some difficult *Clitocybe* species — *C. osmophora*, *C. suaveolens*, *C. disoma* and *C. clavipes*.

Tom Hering

SOUTH STAFFORDSHIRE NATURALISTS' SOCIETY

Less than a dozen people attended the foray at Brown Clee Hill, Shropshire on Sunday 28 September, which was led by Mr N A Wilde. This small number, contending with the very dry conditions which had prevailed for some weeks, managed to record only about 30 common species. The excellent weather and the poor collecting prompted as compensation a desire to reach the summit (540m OD) from which the party gained wide panoramic views of the surrounding countryside under the clear sunny skies.

By kind permission of the National Trust, about 50 people were able to foray in the woods, lake areas, and parkland of the Dudmaston Estate, Shropshire on Sunday 5 October, where despite continuing dry conditions over 100 species were recorded. Interest was shown in a good specimen of *Lentinellus cochleatus* and its fragrance sampled, and in the attractive *Rhodotus palmatus*. Other finds included *Chlorosplenium aeruginascens*, *Peziza ampliata*, *P. cera* and *Sepultaria arenosa*. We are indebted to members of other societies for contributing to the records, and particular thanks are due to Malcolm and Marjorie Clark for asco, myxo, and other records.

Ted Blackwell

YORKSHIRE NATURALISTS' UNION

About 20-30 people gathered for a cold and windy weekend on the exposed chalk country of Flamborough Head, Bridlington, for the YNU Spring Foray on 9-12 May. It was also a late spring. However, Malcolm Clark obtained his usual interesting haul including *Anthostomella punctulata*, *Pyrenopeziza pulveracea*, *Echinula asteriadiformis*, *Plagiostoma inclinata* and *Stictis stellata* — all new to Yorkshire. There was also one agaric, *Resupinatus applicatus*, and a smut unfamiliar to us at two sites, *Urocystis eranthidis* on Winter Aconite.

At the Autumn Foray at Kirbymoorside on 25-28 September, there was good fortune, and the sun smiled on the 30 or so who gathered in various inns in the small town; 15 people used an excellent workroom at the White Swan. Collecting conditions were excellent, and we were all pleased to have a visit from Willis Bramley, still hearty in his 89th year but not quite so good at picking things off the ground as he once was. The list of finds was rich and varied. The following seemed to be new to Yorkshire: *Amanita echinocephala* at Birch Hagg, *Eccilia rhodocylix* and *Phellinus ferreus* at the same site; and *Pluteus romellii* at Robson Spring Wood. Chris Yeates busied himself adding to our small list of aquatic hyphomycetes.

Tom Hering

NEW MEMBERS

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WHITE, Mrs D O, (Student), 10 Park Road, Sale, Cheshire.
ZHANG, Mr BINCHENG, Department of Biology, Huazhong Normal University, Wuhan, Hubei, Peoples' Republic of China.

WANTED

Professor E B Gareth Jones, Director of Research, School of Biological Sciences, King Henry Building, King Henry 1 Street, Portsmouth Polytechnic, Hampshire PO1 2DY, needs fresh material of the following aquatic fungi for a large scale investigation of spore ontogeny and phyletic relationships:

WANTED

Transactions of BMS Vols 79, 80 and 81 for personal reference. Also interested in wide range of reference works on basidiomycetes and ascomycetes — plus complete or substantial runs of mycological periodicals. Contact **Peter Roberts**, 36 Western Road, Torquay TQ1 4RL.

BOOK REVIEWS & NOTICES

Reviews and all publications for review should be sent to **Miss M Holden**, 101 Overstone Road, Harpenden, Hertfordshire AL5 5PL.

Fungi of the Hebrides. By Dennis, R W G (Royal Botanic Gardens, Kew, 1986). Pp 383. Price: £7.75. ISBN 0-947643-02-8

To the two recent county Fungus Floras of Warwickshire and Yorkshire respectively, produced largely by amateurs, there can now be added this highly professional regional Flora. All, in their very different ways add knowledge of the distribution of fungus species in Britain. In the present study the author goes to great pains to relate the local distribution to that of other parts of Scotland and of Britain generally and to that of Europe and other countries of the world. However, all such comparisons are tentative since no country or region can boast of a complete knowledge of its fungi. In regard to the Hebrides, this account can only be regarded as a basis for further work, since much remains to be done in even the best-covered islands; the author believes that there could well be up to twice as many species really present as the 2900 recorded here.

The islands covered comprise all the Outer and Inner Hebrides. The Kintyre peninsula is also incorporated; it adjoins and is very similar in character to the more southerly of the Inner Hebrides, the fungi of which have been well covered, mainly, one would assume, by the author himself. Arran and the other islands of the Clyde estuary are not considered as they do not form part of the Hebrides as generally defined. The records are largely based on the author's own observations during his annual visits in spring and autumn over some 30 years. However, all reliable records made by others are incorporated, including the work done by many mycologists in Mull for the general Flora of that island, published a few years ago.

The arrangement is alphabetical by genera in each order and by species in the genus. Every British genus is listed, even when not represented in the Hebrides, in which case reference is made to its occurrence in the Highlands and other parts of Scotland or, failing that, elsewhere in Britain. The number of Hebridean species and the total number of British species are given for each genus where information on the British species is inadequate. If the genus is represented in the Hebrides, each species recorded is listed, with information on substrate and season; the names of the islands where it has been recorded are followed by information on known records in other northern islands, in Europe and in other countries of the world.

It is interesting that the author continues to reject the name *Crocicreas*, adopted in the new ascomycete checklist and elsewhere, considering as dubious the grounds for substituting this name for the familiar *Cyathicula*, a genus which includes some of our commoner discomycetes.

The treatment of every genus, with available information on distribution, makes this work extremely valuable as a source of reference generally, quite apart from its regional interest; the information on substrates and time of fruiting add to the value and the excellent host index rounds it off. The clear layout and printing and the fine quality of the paper make the book a pleasure to use. The Celtic design on the title page and the alternative preface in Gaelic lend an original touch to this most interesting work, which every field mycologist should possess. It is an invitation to visit some of these delightful and unspoilt islands and to look at their fungi.

Malcolm C Clark

Fungi of Switzerland 2 (Heterobasidiomycetes, Aphyllophorales, Gasteromycetes). By Breitenbach & Kranzlin, F, Editors (Lucern: Verlag Mykologia, 1986). Translated from the German by V L & J F Waters. 412pp, 573 col. photos,

528 text-figures of microscopic features. Price Swiss Fr148 (*ca* £62.50).

This work is simultaneously published in German, French and English and fully maintains the high standards set by Volume 1 (Ascomycetes), see *Bull. Br. mycol. Soc.* 18: 143, 1984. The format is the same as Vol. 1, with three species to a double-page spread, with the colour photograph and line drawing on one page and description and notes on the facing page. Also, as in Vol. 1, there is a brief introduction followed by a table of the systematics used, notes on the region studied and methods of study, a glossary and an indentification key. At the end of the book are 45 additional colour photographs at a scale of 3:1 of hymenophore surfaces. The breakdown of species covered is: Heterobasidiomycetes 44, Aphyllophorales 444, and Gasteromycetes 40; of these about one-third appear not to have been recorded in Britain, but on the other hand it does feature nearly eighty per cent of the species in these groups recorded in the Warwickshire Fungus Flora. The standard of the photographs is very high, the drawings are very clear and the scale is indicated. A very useful feature of the text is that attention is drawn to other close species, and species which could be confused with the one being described. The layout of the book is very practical, making it easy to use and in fact encouraging one to use it. Many of the fungi featured have not previously been illustrated in any readily available book in the English language. Unfortunately the weakness of the pound sterling results in this volume being considerably more costly than Volume 1 was when published in 1984, but by present day standards of book prices it is well worth the money and almost essential to all mycologists interested in these groups.

A W Brand

Svampe. By Ryman, S & Holmasen, I (1986). Pp718, many col. photos. Stockholm: Interpublishing. Price not quoted (about £40).

Written in Swedish and covering the macrofungus flora of Sweden, Norway, Denmark and Finland, this is essentially a collection of coloured photographs and a very welcome one, including as it does, many species not to be found illustrated elsewhere. Some plates, it is true, are poor or poorly reproduced, or fail to show essential features. The plates of *Exidia glandulosa* and of a very few other species are quite useless. Also, one must refer to the text for the size of the fruitbodies. Leaves of familiar vascular plants often provide a scale, but the disks of *Xylaria hypoxylon* and *Poronia punctata* gave me the impression of a small shrub in the one case and large plates in the other. But this is carping. We are offered here well over 1,000 coloured photographs, most of them excellent. In addition, there are the usual introductory chapters, dealing briefly with methods and ecology, keys to genera and species and tiny sketch-maps showing the Scandinavian distribution of most of the species.

About 26 jelly fungi are illustrated, the same number of 'hydnums', 35 clubs, 150 other Aphyllophorales, 40 Gasteromycetes, 136 Ascomycetes, a dozen rusts and other parasitic microfungi, the remainder being familiar and unfamiliar agarics.

A final comment. I have not been able to worry through the Swedish text to discover the classification employed — it does not really matter, but it is unexpected to find *Polyporus* included as one of the genera of Agaricales.

Peter Holland

CAMBRIDGE

The Biology of Marine Fungi

Edited by **S.T. MOSS**

This definitive account of the biology of both lower and higher marine and estuarine fungi reflects the recent growth of interest in these fascinating plants. The contributors are of international repute and cover four main themes – ecology, taxonomy, physiology and industrial and applied biotechnology. Within these a broad spectrum of topics is considered, including pathology of marine plants and animals, mycelial adhesion, biodeterioration and conservation.

382 pp. 1986
0 521 30899 2 **£27.50 net**

Microbiology of the Phyllosphere

Edited by **N.J. FOKKEMA** and **J. VAN DEN HEUVEL**

The phyllosphere provides niches for a variety of microbes which in turn can influence the well-being of the host plants. This comprehensive and authoritative account of the phyllosphere is divided into five sections, which include descriptions of new techniques, the ecology of epiphytic fungi, endophytic leaf fungi, plant-pathogenic and saprophytic prokaryotes, concluding with investigations of biological control on aerial plant surfaces

392 pp. 1986
0 521 32344 4 **£30.00 net**

Ecology of Microbial Communities

Edited by **M. FLETCHER, T.R.G. GRAY** and **J.G. JONES**

The ecology of communities of micro-organisms in natural environments is very complex. Such communities are composed of mixed assemblages of various types of bacteria, algae and protozoa, consequently it is extremely difficult to determine both the types of organisms which occur in various natural environments and, particularly, their physiological processes *in situ.* This book illustrates the considerable progress made in this area, analysing micro-organisms in soil and water as well as microbes isolated from these habitats.

Society for General Microbiology Symposium 41

440 pp. 1987
0 521 33106 4 **£40.00 net**

Diseases and Plant Population Biology

JEREMY J. BURDON

Interactions may occur between plants and their pathogens at two levels – numerical and genetical. The first and most visually apparent is at a numerical level by killing individual plants or by reducing their reproductive output. The continuing debilitating effect of pathogens over many generations may be responsible for the appearance of a wide diversity of disease resistance mechanisms. The book aims to show that diseases have been and still are a very important feature of many non-agricultural plant communities.

Cambridge Studies in Ecology

208 pp. 1987
0 521 30283 8 **Hc £27.50 net**
0 521 31615 4 **Pb £12.50 net**

Cambridge University Press

The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU.

CALENDAR OF MEETINGS

For further details contact the local organiser or the Programme Secretary, **Dr D Moore**.

August

14-16 Truffle Hunt, Savernake Forest, Wilts (Organiser: Mrs J Ingham, 21 Loughmill Rd, Pershore, Worcs)

September

3-10 Autumn Foray, Pershore, Worcs (incl Workshop on Fungal Modelling) (Organiser: Mrs J Ingham)

16-17 Symposium, *Insect-Fungus Interactions* (Joint Meeting with Royal Entomological Society), Imperial College Conference Centre, London (Enquiries: Dr G Bentley, RES, 41 Queen's Gate, London SW7 5HU)

21-23 Symposium, *Fungi & Ecological Disturbance*, Univ Sheffield (Organiser: Dr R C Cooke, Dept Botany, Univ Sheffield, S10 2TN)

25-28 Workshop, *Sand-dune Fungi*, Aberystwyth (Organiser: Dr J Hedger, Dept Microbiology, Univ College of Wales, Aberystwyth SY23 3DA)

October

9-17 BMS Italian Truffle Meeting (incl Truffle Fair), Alba, northern Italy (Organiser: Dr D W Minter)

November

6-8 Workshop, *Laboulbeniomycetes*, CMI (Organiser: Dr D W Minter)

13 Syposium, *Novel Approaches to Systematics & Identification of Fungi* (Joint meeting with Linnean Society), London (Organiser: Dr P F Cannon, CMI)

14 Autumn Taxonomy Meeting, *Mycology, Maps & Microchips* (Joint meeting with Linnean Society), Kew (Organiser: Dr P F Cannon)

December

12 AGM and Presidential Address, London

Instructions to authors

The Editorial Board welcomes material for publication from members and non-members. Articles should have a wide appeal and be written in a style suitable for the non-specialist. General review articles (max 6 pages, incl illustrations) are particularly requested. Please prepare text in double line spacing on one side of A4 paper, leaving wide margins. A second copy is required for larger articles. Originals of figures should be about twice the final size and the scale indicated by a bar-line labelled with a dimension, such as 10 um. Coloured illustrations (provided as a diapositive), if of sufficiently high quality, will be considered. **Authors proposing to submit colour should first contact the Editor.** References must include the full title of both the paper and periodical. Proofs will not normally be sent to authors. Decisions made by the Editorial Board are final.

Contributions to: Dr D N Pegler, Senior Editor, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AE.

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11 APR 1996

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you will need food,
mac and wellies,
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(Photo: G. Godwin)

British Mycological Society Publications and Reprints

The following are obtainable from the Society Librarian, c/o CAB International Mycological Institute, Ferry Lane, Kew, Richmond, Surrey TW9 3AF, also on sale at forays and some meetings. Prices include postage. Cheques should be made payable to 'British Mycological Society'.

Guide to the Literature for the Identification of British Fungi compiled by *Margaret Holden*, Edit. 4, reprinted from *Bulletin* 16 (1982). Incl. new literature and reprinted classical works. **Price £1.00**

Keys to British Species of *Russula*, Edit. 3, 1985. The 2nd edition (1974) is revised to include species recorded in recent years. **Price £4.00**

Key to the Gasteromycetes of Great Britain by *V Demoulin & J R V Marriott*, reprinted from *Bulletin* 15 (1981). **Price 60p**

Keys to the Species of *Entomophthora* by *G M Waterhouse & B L Brady*, Edit. 2, reprinted from *Bulletin* 16 (1982). A preliminary key to encourage work on the genus, the first key to species using field characters and microscopic features. **Price 75p**

The Polypores by *D N Pegler*. Rev. Edit., 1973. Keys to both World genera and British species. **Price £1.00**

A Tabulation of the Genera of the Agaricales (Gill Fungi and Boletes) Based Primarily on Macroscopic Characters by *R W Rayner & A W Brand*, reprinted from *Bulletin* 13 (1979). **Price 50p**

Non-Lichenized Discomycetes by *M C Clark*, 1980. Species recorded in Britain in recent years. **Price £1.00**

British Myxomycetes by *B Ing*, 1968. A census catalogue of British species, fully documented with notes on ecology and distribution, map and list of Watson vice-counties. **Price 50p**

A Fungus Flora of Warwickshire by *M C Clark (Ed)*, 1980, 272pp. Published by BMS for Birmingham Nat. Hist. Society. Survey with much information on habitats, distribution, etc. of 2600 species, invaluable for surveys of other areas. Obtainable from M C Clark, 1 Bittell Lane, Barnt Green, Birmingham B45 8NS. **Price £8.00 (BMS Members £7.00)**

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